Appendix A. NEPA Scoping Materials

Appendix A – Scoping Report

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Appendices

Chapter 1. Introduction

The National Environmental Policy Act (NEPA) requires a Federal agency to fully disclose potential environmental effects of a proposed project with open public participation throughout the decision-making process. Public participation is first achieved in the scoping process, by which the lead Federal agency invites cooperating and participating agencies and interested and potentially affected members of the public to assist in identifying significant impacts to the human and natural environmental that could result from the Proposed Action (Code of Federal Regulations (CFR) 40 § 1501.9 *Scoping*). The U.S. Army Corps of Engineers (USACE), Sacramento District, is preparing a Supplemental Environmental Impact Statement (SEIS)/Subsequent Environmental Impact Report (SEIR) for design refinements associated with the American River Common Features (ARCF) 2016 General Reevaluation Report (GRR) Final Environmental Impact Statement/Final Environmental Impact Report (FEIS/FEIR).

This scoping report contains a brief description of the ARCF SEIS/SEIR, an overview of the public scoping process, and the comments received during the scoping period. The formal scoping comment period for the proposed project began with the publication of the Notice of Intent (NOI) in the Federal[1] Register on October 7, 2022, and ended on December 31, 2022. Public scoping meetings were held virtually on November 2, 2022, and on November 30, 2022, from Sacramento, CA. *Appendix A, Notice of Intent to Prepare a Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report for the 2016 American River Common Features Project, Sacramento, CA*, contains a copy of the NOI and *Appendix C, Copies of Comments Received during the Scoping Period for the Proposed Action*, contains oral and written comments from the public. Oral comments were recorded during the public scoping meeting, and written comments were received via U.S. mail, email, and through the project website (www.sacleveeupgrades.com).

1.1 Proposed Project

USACE is preparing to draft a SEIS/SEIR to analyze changes made during final preliminary design of multiple contract actions within the ARCF project that could result in potentially significant environmental effects. This supplemental document will centralize where the public and agencies can look for the most current project information and will bring environmental considerations up to date. The SEIS/SEIR will focus on new or different features of project designs that have evolved since the original 2016 ARCF GRR FEIS/FEIR was completed, while analyzing the potential environmental impacts of these changes. Accordingly, the Proposed Action for this SEIS/SEIR consists of project features where the final design is sufficiently different from the original design (Design Refinements). Environmental impacts are likely to be different than those analyzed in the 2016 ARCF GRR FEIS/FEIR.

[1] (FR Vol. 87, No.194/Friday, October 7, 2022)

This supplemental document will centralize where the public and agencies need to look for the most current project information and will bring environmental considerations up to date. The SEIS/SEIR will focus on Design Refinements that have evolved since the original 2016 ARCF GRR FEIS/FEIR was completed, while analyzing the potential environmental impacts of these changes.

1.2 Purpose of Scoping

Under NEPA, federal agencies are mandated to consider environmental impacts for all federal agency decision making. NEPA requires federal agencies to cooperate with other agencies including state and local governments, and to involve public stakeholders and the local community in projects that receive federal funding or require federal permits. NEPA created the Council on Environmental Quality (CEQ), which publishes NEPA regulations. CEQ regulations at 40 Code of Federal Regulations Section 1501.7 require an early and open process for determining the scope of issues to be addressed, intending to identify significant and nonsignificant issues related to the proposed action (i.e., scoping).

All interested parties, including federal, state, and local agencies; appropriate federally recognized Native American tribes; interested stakeholders; and minority, low-income, or disadvantaged populations—are urged to participate in the NEPA environmental analysis process. Public participation opportunities are guided by CEQ regulations that include, at a minimum, an NOI, a scoping process, a minimum 45-day public review of the Draft SEIS, and a public meeting on the Draft SEIS.

Throughout the public scoping process for the proposed project, individuals can obtain information on the status and progress of the Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report for the 2016 American River Common Features Project by visiting the project website (www.sacleveeupgrades.com) or by email via ARCF_SEIS@usace.army.mil.

Chapter 2. Scoping Process Summary

NEPA requires an early and open process for determining the scope of the issues to be addressed as part of preparation of the SEIS/SEIR. During this scoping process, the relevant agency will solicit public input. USACE conducted two public scoping meetings, virtually at 5:00 p.m., on November 2, 2022, and on November 30, 2022, from Sacramento, California, to (1) help identify significant issues and data gaps associated with the proposed project; and (2) assist in identifying other potential alternatives in analyzing the potential impacts. USACE will use information gathered during the scoping process to inform the development of a reasonable range of alternatives that meet the Project purpose while minimizing impacts to the human and natural environment to the greatest extent practicable using innovative technology and sustainable design.

The overall NEPA scoping process for the SEIS/SEIR consisted of the following actions.

- Publishing the NOI to prepare the SEIS/SEIR for refinements made to the 2016 ARCF GRR SEIS/SEIR in the Federal Register, including an announcement for the public scoping meeting.
- Distributing a public notice announcing the public scoping meeting and its time and location to newspapers, stakeholders, and other interested parties.
- Developing a public website by which project information, contact information for public comments, and scoping feedback could be exchanged with the public.
- Utilizing an updated comprehensive mailing list from the *2016 American River Common Features SEIS/SEIR* to capture all interested parties and maximize the distribution of scoping information to the local community.
- Sending consultation letters by mail to agencies and tribes including invitations to participate in the scoping process and scoping meetings, and invitations to become cooperating agencies (see Section 2.3, *Government-to-Government Consultation*, in this scoping report for further details on cooperating agencies).
- Holding a public scoping meeting to inform the local community and other interested parties about the proposed action and to solicit written comments on the issues that should be addressed in the SEIS/SEIR.
- Reviewing and categorizing oral and written comments to be evaluated in the Draft SEIS/SEIR.
- Preparing this scoping report.

2.1 Public Notices and Distribution of Notices

The scoping process was initiated on October 7, 2022, when the NOI to prepare a Draft SEIS/SEIR for refinements made to the 2016 ARCF GRR FEIS/FEIR was published in the Federal Register. The NOI provided a description of the proposed action, further information on the scoping and public involvement process, potentially significant environmental issues, additional review and consultation to be incorporated into the preparation of the Draft SEIS/SEIR, and an estimated timeframe for the availability of the Draft SEIS/SEIR. The NOI included the project website and provided point of contact information at USACE to encourage public involvement and solicit comments regarding the proposed action.

A letter with the scoping meeting information was sent by mail to all interested parties previously identified in the *2016 FEIS/FEIR*. A copy of the scoping meeting letter notice is provided in *Appendix B, Public Scoping Meeting Notice*.

During the public scoping period, USACE provided the public with a variety of methods with which to comment on the proposed action and issues relevant to the proposed project.

- Orally and in writing at the public scoping meeting.
- Via e-mail to ARCF_SEIS@usace.army.mil.
- Via email to USACE through the project website at www.sacleveeupgrades.com.
- Via mail to Public Affairs Office, U.S. Army Corps of Engineers, 1325 J Street Room 1513, Sacramento, CA 95814.

As other interested parties are identified, they will be added to the mailing list, which will be updated continuously throughout development and finalization of the SEIS/SEIR. Anyone requesting information regarding the SEIS/SEIR will be added to the mailing list, unless otherwise requested.

2.2 Advertisement of Public Meeting in Newspapers

To notify the public, USACE posted an advertisement in the local newspaper prior to the scoping meeting. An advertisement was submitted to *The Sacramento Bee*. A copy of the scoping meeting newspaper advertisement is provided in *Appendix B, Public Scoping Meeting Notice*.

2.3 Government-to-Government Consultation

The USACE is the NEPA lead agency for the SEIS. Project partners include the Sacramento Area Flood Control District (SAFCA), the Central Valley Flood Protection Board (CVFPB) as the California Environmental Quality Act (CEQA) lead agency for the SEIR, and the Department of Water Resources assisting CVFPB with CEQA.

USACE sent an email invitation on October 21, 2022, to representatives from state and federal agencies including the U.S. Environmental Protection Agency (USEPA), the National Marine Fisheries Service (NMFS), the U. S. Fish Wildlife Service (USFWS), the Federal Emergency Management Agency (FEMA), the Bureau of Indian Affairs (BIA), the National Park Service (NPS), and the U.S. Bureau of Reclamation (USBR). This email is included in *Appendix B, Public Scoping Meeting Notice.*

2.4 Public Scoping Meeting

Public scoping meetings were held virtually in Sacramento County on November 2, and 30, 2022. There were 54 Attendees included private citizens, industry stakeholders, non-governmental organizations, and elected officials for the first meeting and 39 attendees for the second meeting. USACE Environmental Manager opened the meeting at 5:00 p.m. and described the ARCF project, the EIS process, mitigation, a general EIS timeline, and the opportunities for public involvement and comment. Following the presentation, members of the public were invited to make oral comments. A total of 9 people made oral comments, and two anonymous people left two comments in the meeting chat box. The public was encouraged to submit written comments on the proposed project. A total of 7 people provided comments in writing and submitted either a letter or an email that is found on the project website at www.sacleveeupgrades.com.

2.5 Public Comments

The scoping comment period for the proposed project began on October 7, 2022, and closed on December 31, 2022. USACE provided the public and agencies additional time to comment since a second public meeting was held on November 30, 2022. General comments were accepted at the public scoping meeting, and written comments were accepted via mail or email.

Chapter 3. Comment Analysis

Comments during the public scoping period were received as follows: 9 individuals commented at the public scoping meeting, 4 individuals provided comments electronically, and 5 letters were received by U.S. mail from community members, agencies, and organizations.

There were no comments received after December 31, 2022, but if any additional comments are received prior to the publication of the Draft SEIS/SEIR, they will be considered.

3.1 Review and Organization of the Scoping Comments

Although there were only 18 total commentors, each communication included multiple comments resulting in 69 categorized comments. Comment topics included concerns and general support related to community involvement/engagement, general NEPA guidelines, surface water and groundwater quality and supply, air quality, and mitigation concerns surrounding the American River Mitigation (Urrutia) property. As previously stated, copies of all comments can be found in *Appendix C, Copies of Comments Received during the National Environmental Quality Act Scoping Period* and summarized by issue in *Appendix D, Summary of Comments Received during the National Environmental Policy Act Scoping Period*. Many of the oral comments and individual letters and emails addressed more than one topic.

3.2 Overview of Comments Received

Most of the comments received expressed concerns related to mitigation. Of the 69 categorized comments, 21 comments were mitigation related, 7 comments were related to air quality or climate change, 3 comments were related to water resources, 2 comments were related to cultural resources, 2 comments were related to environmental justice, 1 comment was related to aquatic resources, and the remaining comments were in reference to NEPA scoping, budget, utilities, recreation, traffic, noise, transportation, and aesthetics. For more information on USACE and partners response to comments, Appendix D includes a table that is categorized and includes summaries of comments and detailed responses.

3.3 Recommendations for the SEIS

All comments received during the comment period for the NEPA scoping period will be used to inform the scope and development of the Draft SEIS/SEIR. Recommendations for the SEIS/SEIR include comprehensively addressing the issues presented, providing for an open and inclusive public involvement process, and providing transparency to the community regarding the specifics of the proposed project.

Chapter 4. Future Public Involvement

Throughout the development of the SEIS, there will be additional opportunities for public involvement and comment. There is a minimum 45-day public review of the Draft SEIS/SEIR, along with a public meeting on the Draft SEIS/SEIR required by CEQ regulations. The Final SEIS/SEIR must be posted to the Federal Register for 30-days prior to the Record of Decision (ROD) being signed. USACE also plans on opportunities for public awareness, involvement, and participation including website updates and formal and informal meetings with interested members of the public, community groups, and individuals as requested.

Updated information will be posted on the project website (www.sacleveeupgrades.com). Agencies and the public will be notified when the Draft SEIS/SEIR is available for review and comment. USACE will host a public hearing to gather comments on the Draft SEIS/SEIR.

Chapter 5. Literature Cited

U.S. Army Corps of Engineers, Sacramento District. 2016. *Final Environmental Impact Statement/Final Environmental Impact Report for the American River Common Features General Reevaulation Report*. State Clearing House Number 2005072046. Sacramento, CA.

Appendix A. Notice of Intent for the ARCF SEIS/SEIR

surveys, sampling, or testing may be required.

An electronic copy of the ROD is available for review and download at: *https://home.army.mil/belvoir/index.php/about/Garrison/directorate-public-works/environmental-division*. A printed copy may be requested from Fort Belvoir DPW–ED at the phone number or email address listed above.

Publication of the ROD formally concludes the NEPA process for this Proposed Action. The Army will proceed with the Full Implementation Alternative described in the Final EIS and will execute the mitigation and protective measures identified in the ROD.

James W. Satterwhite Jr.,

Army Federal Register Liaison Officer.

[FR Doc. 2022–21858 Filed 10–6–22; 8:45 am]

BILLING CODE 3711–02–P

DEPARTMENT OF DEFENSE

Department of the Army, Army Corps of Engineers

Notice of Intent To Prepare a Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report XIV [XIV] for the 2016 American River Watershed Common Features Project, Sacramento, CA

AGENCY: U.S. Army Corps of Engineers, DoD.

ACTION: Notice of intent.

SUMMARY: The U.S. Army Corps of Engineers (USACE) intends to prepare a draft Supplemental Environmental Impact Statement (SEIS)/Subsequent Environmental Impact Report (SEIR) to the 2016 American River Watershed Common Features (ARCF) General Reevaluation Report (GRR), Final Environmental Impact Statement/Environmental Impact Report (FEIS/FEIR). USACE will serve as the lead National Environmental Policy Act (NEPA) agency and the Central Valley Flood Protection Board (CVFPB) will serve as the lead California Environmental Quality Act (CEQA) agency, with support from the California Department of Water Resources (DWR). The construction of cutoff walls and seepage berms to decrease the likelihood of levee failure, and installation of bank armoring to protect levees from erosion, are project actions authorized by WRDA 2016 to reduce flood risk to metropolitan Sacramento. The elements of the project will be organized and discussed in the SEIS in a manner to avoid restating discussions and findings that remain current and accurate in the 2016 ARCF EIS/EIR. This would allow the reader of the ARCF SEIS/SEIR to focus on the document's analysis of impacts of design changes to project features, while the relevant sections of the 2016 ARCF GRR FEIS/FEIR would be referenced where no design changes are planned. Mitigation will be considered as required for any additional impacts addressed in the ARCF SEIS/SEIR.

A description of the current proposed plans for the project is set forth below.

DATES: Written comments regarding the scope of the environmental analysis should be received by November 31, 2022.

ADDRESSES: Written comments and suggestions concerning ARCF Project and requests to be included on the Project mailing list may be submitted to Guy Romine, U.S. Army Corps of Engineers, Sacramento District, Attn: Environmental Analysis Section (CESPK–PDR–A), 1325 J Street, Sacramento, CA 95814.

FOR FURTHER INFORMATION CONTACT: Mr. Guy Romine, telephone at (916) 557–5100, email at *ARCF_SEIS@usace.army.mil*. Additional information will also be posted on the internet at: *www.sacleveeupgrades.com*.

SUPPLEMENTARY INFORMATION:

1. Purpose and Need

The Purpose of the ARCF SEIS/SEIR project is to reduce the overall flood risk within the study area. An unacceptably high risk of flooding from levee failure threatens the public safety of the City of Sacramento, as well as property and critical infrastructure throughout the study area. The Sacramento metropolitan area is one of the most at-risk areas for flooding in the United States. There is a high probability that flood flows in the American and Sacramento Rivers will stress the network of levees protecting the system to the point that levees could fail. Previous segments of the authorized project have been or will be constructed as authorized, but there are remaining segments that must still be implemented to reduce flood risk associated with erosion, seepage, and levee stability within the study area.

USACE has determined that the levee system along the Sacramento and American Rivers do not meet the current Federal standards for flood risk reduction due to seepage, slope stability, and erosion. The proposed project is needed to reduce risk of levee failure.

2. Proposed Action

USACE is preparing to draft a SEIS/SEIR to analyze changes made during final preliminary design of multiple contract actions within the ARCF project that could result in potentially significant environmental effects. This supplemental document will centralize where the public and agencies can look for the most current project information and will bring environmental considerations up to date. The SEIS/SEIR will focus on new or different features of project designs that have evolved since the original ARCF GRR FEIS/FEIR was completed, while analyzing the potential environmental impacts of these changes. Accordingly, the Proposed Action for this SEIS/SEIR consists of project features where the final design is sufficiently different from the original design. Environmental impacts are likely to be different than those analyzed in the 2016 FEIS/FEIR, with these project features are outlined below.

Lower American River Design Refinements

Using updated modeling and data, USACE completed a semi-quantitative risk assessment (SQRA), which identified several areas on the Lower American River requiring design refinements that were not specifically addressed in the ARCF GRR FEIS/FEIR. Different erosion protection methods than those discussed in the ARCF GRR FEIS/FEIR are now indicated to provide better onsite mitigation, fisheries habitat, and to decrease impacts to heritage oak trees. Specifically, launchable toe protection and tie backs may be required in many areas. A launchable rock toe and tie backs are placed at the waterside edge of a constructed planting bench, lower on the levee/riverbank, to allow riparian vegetation to grow next to the water's edge. If erosion and scour occur below the launchable toe, the revetment placed in the launchable toe would launch and cover the eroded area, preventing further erosion and providing bank slope stability. Additionally, haul routes and staging areas to implement these erosion control areas will be needed. Erosion protection work may also be implemented around trees in certain areas, to minimize a risk for scour caused by trees.

Lower American River—State Route 160 Bridge Area Design Refinements

The SQRA also determined that the area under the State Route 160 Bridge contributes to flood risk, and will need supplementary measures to properly address this risk. The Proposed Action will require additional bank protection work in this area, including evaluation of staging areas, the addition of haul routes outside the original project footprint, and an extended nighttime work schedule not evaluated in the 2016 ARCF GRR FEIS/FEIR.

Sacramento River Erosion Design Refinements and Construction Requirements

The 2016 ARCF GRR FEIS/FEIR did not analyze staging areas for erosion protection work since it was assumed all work would be done by barge. Land side staging areas and haul routes to the staging areas have been added to the Proposed Action to ensure revised construction needs are met. Erosion protection features are now designed to include more rock than was originally estimated in the 2016 ARCF GRR FEIS/FEIR and will be further considered in the ARCF SEIS/SEIR.

Magpie Creek Area

The Proposed Action would require realignment of the levee and canal at Magpie Creek, increase localized storage and water conveyance, and an increased height of the levee at that site. Night work would be considered in the Proposed Action as a method to reduce daytime noise impacts and reduce the daytime closures of Raley Boulevard. In the Preferred Alternative of the ARCF GRR FEIS/FEIR, Raley Boulevard was presumed to be partially closed with the possibility of the loss of the northern right-hand turn lane, but under the Proposed Action the road would be fully closed during a portion of the construction season.

Mitigation Sites

The Proposed Action includes a comprehensive mitigation proposal to cover all remaining impacts of the ARCF project. The ARCF GRR FEIS/FEIR cited the need for additional mitigation and restoration planning once the designs of the ARCF Project were closer to completion. Project planners have now determined that on-site mitigation commitments set forth in the ARCF GRR FEIS/FEIR will be inadequate if the revised Proposed Action is implemented. The Proposed Action may include purchase of mitigation bank credits, or construction of dedicated mitigation facilities, or both, to meet additional mitigation requirements.

3. Alternatives

The Alternatives to the Proposed Action that may be considered in the SEIS/SEIR include: (1) Construction of mitigation sites and purchase of mitigation bank credits, as well as design refinements and construction requirements discussed above; and (2) the required No Action Alternative. The No Action Alternative would be defined as construction of the ARCF 2016 Project exactly as described in Alternative 2 of the ARCF GRR FEIS/FEIR, (the Preferred Alternative).

4. Scoping Process

a. A public scoping meeting will be held in the form of a teleconference and/or webinar to present an overview of the Proposed Action, its project features, and the ARCF SEIS/SEIR Process. Scoping will afford all interested parties an opportunity to provide comment on the proposed scope of analysis in the draft document and to identify alternatives measures. Comments on scoping, including potential alternatives, pertinent information, studies, and/or analyses, relevant to this Proposed Action may be submitted to the contacts listed below. If any reasonable alternatives are identified during the scoping period, USACE will evaluate those alternatives in the draft SEIS/SEIR, along with a no action alternative. The public scoping meeting is anticipated to be held on 2 November 2022. Exact time, registration details, additional information, and any schedule changes will be announced online at: *www.sacleveeupgrades.com.*

b. The Proposed Action is anticipated to affect the following resources, which the SEIS/SEIR will fully consider, including visual resources, vegetation and wildlife, fisheries, special status species, cultural resources, air quality, transportation, climate change, recreation, hydrology and water quality, noise, geological resources, environmental justice, and public utilities. Those resources expected to be unaffected by the design changes encompassed by the Proposed Action will not be discussed in the ARCF SEIS/SEIR.

c. USACE will consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (NMFS) to ensure that the Proposed Action complies with the Endangered Species Act and the Fish and Wildlife Coordination Act. The NMFS anticipates receipt of one or more requests for authorization to take incidental to activities related to the project under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). USACE will also consult with the State Historic Preservation Officer and Native American Tribes to ensure compliance with the National Historic Preservation Act, and with the National Parks Service to seek a Wild and Scenic Rivers Act consistency determination for the Proposed Action. Additional State consultations may be required under CEQA or other California State Regulations. These consultations will be coordinated by CVFPB or DWR.

USACE intends to consult with CRWQCB support its decision on any permits and permissions requested under sections 10 and 14 of the Rivers and Harbors Act, section 401 and 404 of the Clean Water Act.

d. This NOI commences the public scoping process to identify issues and potential alternatives for consideration in the ARCF SEIS/SEIR. Throughout the scoping process, Federal agencies; Tribal, State, and local governments; and the general public have the opportunity to help USACE determine significant resources and issues, impact-producing factors, reasonable alternatives (*e.g.*, size, geographic, seasonal, or other restrictions on construction and siting of facilities and activities), and potential mitigation measures to be analyzed in the SEIS/SEIR, as well as to provide additional information. In the interests of efficiency, completeness, and facilitating public involvement, the SEIS/SEIR will use the NEPA process to fulfill public involvement requirements established in *36 CFR 800.2(d).*

USACE anticipates it will hold a virtual public scoping meeting for the SEIS/SEIR on 2 November 2022. Registration details, additional information, and any schedule changes will be announced online at: *www.sacleveeupgrades.com.*

After completion of the Draft ARCF SEIS/SEIR a 45-day public review period will be provided for interested parties and agencies to review and comment on the draft document. All interested parties are encouraged to respond to this notice and provide a current address if they wish to be notified of the ARCF SEIS/SEIR circulation.

4. Availability

After the draft ESIS/SEIR is completed, USACE will publish a notice of availability (NOA) and request public comments on the draft SEIS/SEIR. USACE expects to issue the NOA in August 2023. After the public comment period ends, the Army will review and respond to comments received and will develop the final SEIS/SEIR. USACE expects to make the final SEIS/SEIR available to the public in May 2024. A ROD will be completed no sooner than

30 days after the final EIS is released, in accordance with *40 CFR 1506.11*.

Antoinette R. Gant,

COL (P), EN, Commanding.

[FR Doc. 2022–21870 Filed 10–6–22; 8:45 am]

BILLING CODE 3720–58–P

DEPARTMENT OF EDUCATION

[Docket No.: ED–2022–SCC–0081]

Agency Information Collection Activities; Submission to the Office of Management and Budget for Review and Approval; Comment Request; Consolidated State Performance Report Renewal (Part 1 and Part 2)

AGENCY: Office of Elementary and Secondary Education (OESE), Department of Education (ED).

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995, ED is proposing a revision of a currently approved collection.

DATES: Interested persons are invited to submit comments on or before November 7, 2022.

ADDRESSES: Written comments and recommendations for proposed information collection requests should be sent within 30 days of publication of this notice to *www.reginfo.gov/public/do/PRAMain*. Find this information collection request (ICR) by selecting "Department of Education" under "Currently Under Review," then check the "Only Show ICR for Public Comment" checkbox. *Reginfo.gov* provides two links to view documents related to this information collection request. Information collection forms and instructions may be found by clicking on the "View Information Collection (IC) List" link. Supporting statements and other supporting documentation may be found by clicking on the "View Supporting Statement and Other Documents" link.

FOR FURTHER INFORMATION CONTACT: For specific questions related to collection activities, please contact Sarah Newman, 202–453–6956.

SUPPLEMENTARY INFORMATION: The Department, in accordance with the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3506(c)(2)(A)), provides the general public and Federal agencies with an opportunity to comment on proposed, revised, and continuing collections of information. This helps the Department assess the impact of its information collection requirements and minimize the public's reporting burden. It also helps the public understand the Department's information collection requirements and provide the requested data in the desired format. ED is soliciting comments on the proposed ICR that is described below. The Department is especially interested in public comments addressing the following issues: (1) is this collection necessary to the proper functions of the Department; (2) will this information be processed and used in a timely manner; (3) is the estimate of burden accurate; (4) how might the Department enhance the quality, utility, and clarity of the information to be collected; and (5) how might the Department minimize the burden of this collection on the respondents, including through the use of information technology. Please note that written comments received in response to this notice will be considered public record.

Title of Collection: Consolidated State Performance Report Renewal (Part 1 and Part 2).

OMB Control Number: 1810–0724.

Type of Review: A revision of a currently approved collection.

Respondents/Affected Public: State, Local, and Tribal Governments.

Total Estimated Number of Annual Responses: 14,653.

Total Estimated Number of Annual Burden Hours: 16,481.

Abstract: The Consolidated State Performance Report (CSPR) is the required annual reporting tool for each State, the Bureau of Indian Education, District of Columbia, and Puerto Rico as authorized under Section 8303 of the Elementary and Secondary Education Act (ESEA), as amended by the Every Student Succeeds Act (ESSA). The CSPR collects data on programs authorized by: Title I, Part A; Title I, Part C; Title I, Part D; Title II, Part A; Title III, Part A; Title IV Part A; Title V, Part A; Title V, Part B, Subparts 1 and 2; and The McKinney-Vento Act. The information in this collection relate to the performance and monitoring activities of the aforementioned programs under ESSA and the McKinney-Vento Act. These data are needed for reporting on Government Performance and Results Act (GPRA) as well as other reporting requirements under ESSA. This submission is a request to update the currently-approved CSPR collection (OMB 1810–0724) for school years 2022–23, 2023–24, and 2024–25. There are three substantive changes to the collection since it was last approved. First, we propose revising the structure and standardizing the language of the CSPR across sections to create consistent language, remove duplication or redundancies in the guidance, and to reduce text that will be added to technical assistance documents. Second, we propose reducing the number of tables containing Title I, Part A, Title I, Part C, and McKinney-Vento Act data. Third, we propose moving the State Report Cards section from CSPR Part I to CSPR Part II.

Dated: October 4, 2022.

Kun Mullan,

PRA Coordinator, Strategic Collections and Clearance, Governance and Strategy Division, Office of Chief Data Officer, Office of Planning, Evaluation and Policy Development.

[FR Doc. 2022–21926 Filed 10–6–22; 8:45 am]

BILLING CODE 4000–01–P

DEPARTMENT OF EDUCATION

[Docket No.: ED–2022–SCC–0124]

Agency Information Collection Activities; Comment Request; Educational Opportunity Centers Program (EOC) Annual Performance Report

AGENCY: Office of Postsecondary Education (OPE), Department of Education (ED).

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995, ED is proposing a reinstatement without change of a previously approved collection.

DATES: Interested persons are invited to submit comments on or before December 6, 2022.

ADDRESSES: To access and review all the documents related to the information collection listed in this notice, please use *http://www.regulations.gov* by searching the Docket ID number ED–2022–SCC–0124. Comments submitted in response to this notice should be submitted electronically through the Federal eRulemaking Portal at *http://www.regulations.gov* by selecting the Docket ID number or via postal mail, commercial delivery, or hand delivery. If the *regulations.gov* site is not available to the public for any reason, ED will temporarily accept comments at *ICDocketMgr@ed.gov*. Please include the docket ID number and the title of the information collection request when requesting documents or submitting comments. *Please note that comments submitted by fax or email and those submitted after the comment period will not be accepted.* Written requests for information or comments submitted by postal mail or delivery should be addressed to the PRA Coordinator of the Strategic Collections and Clearance

Dated: October 12, 2022.

Aaron T. Siegel,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2022–22470 Filed 10–14–22; 8:45 am]

BILLING CODE 5001–06–C

DEPARTMENT OF DEFENSE

Office of the Secretary

[Docket ID: DoD–2022–OS–0057]

Submission for OMB Review; Comment Request

AGENCY: Office of the Under Secretary of Defense for Personnel and Readiness (OUSD(P&R)), Department of Defense (DoD).

ACTION: 30-Day information collection notice.

SUMMARY: The DoD has submitted to the Office of Management and Budget (OMB) for clearance the following proposal for collection of information under the provisions of the Paperwork Reduction Act.

DATES: Consideration will be given to all comments received by November 16, 2022.

ADDRESSES: Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to *www.reginfo.gov/public/do/PRAMain*. Find this particular information collection by selecting "Currently under 30-day Review—Open for Public Comments" or by using the search function.

FOR FURTHER INFORMATION CONTACT: Angela Duncan, 571–372–7574, *whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil*.

SUPPLEMENTARY INFORMATION:

Title; Associated Form; and OMB Number: Post-Election Voting Survey of State Election Officials; OMB Control Number 0704–PEVS.

Type of Request: New.

Number of Respondents: 55.

Responses per Respondent: 1.

Annual Responses: 55.

Average Burden per Response: 15 minutes.

Annual Burden Hours: 13.75 hours.

Needs and Uses: The primary objective of the Post-Election Voting Survey of State Election Officials, conducted on behalf of the Federal Voting Assistance Program (FVAP), is to gather feedback from the state election officials (SEOs) responsible for administering the Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA) on behalf of the military and overseas voters. This customer service focused survey will help FVAP understand how it can best engage election officials and identify areas where its processes can be improved. This ongoing evaluation will help determine the extent to which FVAP is achieving its mission and what actions FVAP might be able to take in the future to improve its products and services. Conducting this research will help FVAP meet its federal and congressional mandates in terms of ensuring that UOCAVA voters are receiving adequate support from state officials in the registration and voting process for federal elections. The data obtained through this study is also intended to provide insights into existing barriers to UOCAVA voting and recommendations for addressing these challenges. To obtain the necessary information, the Post-Election Voting Survey of State Election Officials project will use data collected from the population of SEOs from all 50 U.S. States, the District of Columbia, and the four U.S. territories covered under UOCAVA: Puerto Rico, Guam, American Samoa, and the U.S. Virgin Islands.

Affected Public: Individuals or households.

Frequency: Biennially.

Respondent's Obligation: Voluntary.

OMB Desk Officer: Ms. Jasmeet Seehra.

You may also submit comments and recommendations, identified by Docket ID number and title, by the following method:

• *Federal eRulemaking Portal: http://www.regulations.gov*. Follow the instructions for submitting comments.

Instructions: All submissions received must include the agency name, Docket ID number, and title for this **Federal Register** document. The general policy for comments and other submissions from members of the public is to make these submissions available for public viewing on the internet at *http://www.regulations.gov* as they are received without change, including any personal identifiers or contact information.

DOD Clearance Officer: Ms. Angela Duncan.

Requests for copies of the information collection proposal should be sent to Ms. Duncan at *whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil*.

Dated: October 12, 2022.

Aaron T. Siegel,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2022–22519 Filed 10–14–22; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Army Corps of Engineers

Notice of Intent To Prepare a Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report XIV [XIV] for the 2016 American River Watershed Common Features Project, Sacramento, CA

AGENCY: U.S. Army Corps of Engineers

ACTION: Notice of intent; correction.

SUMMARY: The U.S. Army Corps of Engineers (USACE) published a document in the **Federal Register** of October 7, 2022, concerning the intent to prepare a draft Supplemental Environmental Impact Statement (SEIS)/Subsequent Environmental Impact Report (SEIR) to the 2016 American River Watershed Common Features (ARCF) General Reevaluation Report (GRR), Final Environmental Impact Statement/Environmental Impact Report (FEIS/FEIR). The document contained an incorrect date.

FOR FURTHER INFORMATION CONTACT: Mr. Guy Romine, telephone at (916) 557–5100, email at *ARCF_SEIS@usace.army.mil*.

SUPPLEMENTARY INFORMATION:

Correction

In the **Federal Register** of October 7, 2022, in FR Doc. 2022–21870, on page 61003, in the second column, correct the **DATES** caption to read:

DATES: Written comments regarding the scope of the environmental analysis should be received by December 1, 2022.

David B. Olson,

Federal Register Liaison Officer, Army Corps of Engineers.

[FR Doc. 2022–22526 Filed 10–14–22; 8:45 am]

BILLING CODE 3720–58–P

DEPARTMENT OF DEFENSE

Department of the Navy

[Docket ID: USN–2022–HQ–0028]

Proposed Collection; Comment Request

AGENCY: Department of the Navy, Department of Defense (DoD).

ACTION: 60-Day information collection notice.

SUMMARY: In compliance with the *Paperwork Reduction Act of 1995*, the Department of the Navy announces a proposed public information collection

Appendix B. Public Meeting Scoping Notice

Notice

The U.S Army Corps of Engineers, Sacramento District (Corps) has scheduled a public scoping meeting for the 2016 American River Common Features Project (ARCF) Supplemental Environmental Impact Statement on November 2, 2022, at 5:00 pm. The Meeting will be held in a virtual setting at ____________. All interested individuals are invited to attend.

The Corps intends to prepare a draft Supplemental Environmental Impact Statement (SEIS)/Subsequent Environmental Impact Report (SEIR) to the ARCF General Reevaluation Report (GRR), Final Environmental Impact Statement/Environmental Impact Report. The Corps is the lead federal agency under the National Environmental Policy Act and the Central Valley Flood Protection Board will serve as the lead California Environmental Quality Act agency, with support from the California Department of Water Resources. The projects in this program that are being evaluated under this SEIS/SEIR include Lower American River erosion (LAR) contract 3B, LAR 4A, Magpie, Mitigation and, Sacramento River erosion contract 3. These projects have undergone refinement and design changes since they were originally described in the 2016 ARCF GRR.

The purpose of the 2016 ARCF is to reduce flood risk by modernizing Sacramento's aging flood infrastructure along the American and Sacramento Rivers and Magpie Creek. The work authorized by Congress includes the construction of cutoff walls and seepage berms to decrease the likelihood of levee failure, and installation of bank armoring to protect levees from erosion.

Additional project information and an opportunity to provide written comments is available on the ARCF SEIS website at: www.sacleveeupgrades.com. For further information contact: Mr. Guy Romine, telephone at (916) 557-5100, e-mail at *ARCF_SEIS@usace.army.mil*.

AFFIDAVIT OF PUBLICATION

Account #	Order Number	Identification	Order PO	Amount	Cols	Depth
77907	335522	Print Legal Ad-IPL00946670 - IPL0094667		$498.79	1	62 L

Attention: Drew Sutton

GEI Consultants Inc.
2868 Prospect Park Drive, Suite 400
Rancho Cordova, CA 95670

Notice

The U.S Army Corps of Engineers, Sacramento District (Corps) has scheduled a public scoping meeting for the 2016 American River Common Features Project (ARCF) Supplemental Environmental Impact Statement on November 2, 2022 at 5:00 pm. The Meeting will be held in a virtual setting at https://usace1.webex.com/meet/guy.k.romine. All interested individuals are invited to attend.

The Corps intends to prepare jointly with the Central Valley Flood Protection Board (CVFPB) a draft Supplemental Environmental Impact Statement (SEIS)/Subsequent Environmental Impact Report (SEIR) to the ARCF General Reevaluation Report (GRR), Final Environmental Impact Statement/Environmental Impact Report. The Corps is the lead federal agency under the National Environmental Policy Act and the CVFPB will serve as the lead California Environmental Quality Act agency, in coordination with the California Department of Water Resources. The projects in this program that are being evaluated under this SEIS/SEIR include Lower American River erosion (LAR) Contract 3B, LAR Contract 4A, Sacramento River Erosion Contract 3, North Area Streams Reach I (Magpie Creek), and Mitigation sites for loss of riparian habitat along the American and Sacramento Rivers. These projects have undergone refinement and design changes since they were originally described in the 2016 ARCF GRR.

The purpose of the 2016 ARCF project is to reduce flood risk by modernizing Sacramento's aging flood infrastructure along the American and Sacramento Rivers and Magpie Creek. The work authorized by Congress includes the construction of cutoff walls and seepage berms to decrease the likelihood of levee failure, and installation of bank protection to protect levees from erosion.

Additional project information and an opportunity to provide written comments until December 31, 2022 is available on the ARCF 2016 Project website at: www.sacleveeupgrades.com. For further information contact: Mr. Guy Romine, telephone at (916) 557-5100, e-mail at ARCF_SEIS@usace.army.mil.

IPL0094667
Oct 19 2022

DECLARATION OF PUBLICATION (C.C.P.2015.5)

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the printer and principal clerk of the publisher of The Sacramento Bee, printed and published in the City of Sacramento, County of Sacramento, State of California, daily, for which said newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Sacramento, State of California, under the date of September 26, 1994, Action No. 379071; that the notice of which the annexed is a printed copy, has been published in each issue thereof and not in any supplement thereof on the following dates, to wit:

No. of Insertions: 1

Beginning Issue of: 10/19/2022

Ending Issue of: 10/19/2022

Legals Clerk

COUNTY OF DALLAS
STATE OF TEXAS

I certify (or declare) under penalty of perjury that the foregoing is true and correct and that this declaration was executed at Sacramento, California,on 10/19/2022.

Stefani Beard

Notary Public in and for the state of Texas, residing in Dallas County

STEFANI SCOTT BEARD
My Notary ID # 131766951
Expires October 23, 2022

**Extra charge for lost or duplicate affidavits.
Legal document please do not destroy!**

From: Martin, Nathaniel J CIV USARMY CESPK (USA) <Nathaniel.J.Martin@usace.army.mil>
Sent: Friday, October 21, 2022 9:38 AM
To: 14danmeier@gmail.com; Alessandro.amaglio@fema.dhs.gov; allison.bosworth@noaa.gov; amy.dutschke@bia.gov; barbara_rice@nps.gov; bhubbard@usbr.gov; Dunning.connell@Epa.gov; ellen.mcbride@noaa.gov; jennifer_hobbs@fws.gov; Susan_Rosebrough@nps.gov; ARandolph@cityofsacramento.org; bellase@SacCounty.NET; CountyExecutive@SacCounty.net; dmunger@saclibrary.org; drepan@cityofsacramento.org; eguerra@cityofsacramento.org; feedback@sswd.org; hchan@cityofsacramento.org; jcorless@sacog.org; jsharris@cityofsacramento.org; KHuss@airquality.org; kvalenzuela@cityofsacramento.org; Nottolid@saccounty.net; recdistrict3@hotmail.com; richdesmond@saccounty.gov; rjennings@cityofsacramento.org; Sloloee@cityofsacramento.org; sorgenkc@saccounty.gov; SupervisorFrost@saccounty.net; SupervisorKennedy@saccounty.gov; SupervisorSerna@Saccounty.gov; arc@ARConservancy.org; california@tnc.org; communications@metrochamber.org; connect@northsacramentochamber.org; coyoteontheriver@gmail.com; deb@sacbike.org; friendoftheswainsonshawk@gmail.com; gary@cepsym.org; gregg.ellis@icf.com; info@arpf.org; info@sacramentoriverparkway.org; info@sarariverwatch.org; info@thelatinocenter.org; jpeifer@sgah20.org; melinda@floodassociation.net; office@ecosacramento.net; Stork, Roland <rstork@friendsoftheriver.org>;
Subject: American River Common Features (ARCF) SEIS/SEIR Public Scoping Meeting November 2, 2022, at 5:00 pm

The U.S Army Corps of Engineers, Sacramento District (USACE) has scheduled a public scoping meeting for the American River Common Features Project (ARCF) Supplemental Environmental Impact Statement (SEIS) on November 2, 2022, at 5:00 pm. The Meeting will be held in a virtual setting at https://usace1.webex.com/meet/guy.k.romine. All interested individuals are invited to attend.

This meeting is to inform the public of the upcoming environmental analysis for the SEIS and define the range of issues and potential alternatives. The SEIS is a supplement to the ARCF General Reevaluation Report (GRR), Final Environmental Impact Statement/Environmental Impact Report and will be prepared jointly with the Central Valley Flood Protection Board (CVFPB) Subsequent Environmental Impact Report (SEIR). USACE is the lead federal agency under the National Environmental Policy Act and the CVFPB serves as the lead California Environmental Quality Act agency, in coordination with the California Department of Water Resources. The projects in this program that are being evaluated under this SEIS/SEIR include Lower American River (LAR) erosion Contract 3B, LAR Contract 4A, Sacramento River Erosion Contract 3, North Area Streams Reach I (Magpie Creek), and Mitigation sites for loss of riparian habitat along the American and Sacramento Rivers. These projects have undergone refinement and design changes since they were originally described in the ARCF GRR and EIS/EIR.

Additional project information and an opportunity to provide written comments is available on the ARCF 2016 Project website at: www.sacleveeupgrades.com. For further information please contact: Mr. Nathaniel Martin, by telephone at (916) 557-5100, or by e-mail at ARCF_SEIS@usace.army.mil.

Nathaniel (Nate) Martin
Environmental Manager
1325 J Street, Room 1000
Sacramento, California 95814
nathaniel.j.martin@usace.army.mil
(916) 557-6708 desk

Appendix C. Copies of Comments Received during the National Environmental Policy Act Scoping Period

From: Anna Starkey
To: ARCF SEIS
Subject: [Non-DoD Source] Public Scoping Meeting and NOI 2016 American Watershed Common Features Project
Date: Friday, October 28, 2022 1:32:42 PM
Attachments: American River Common.pdf

Dear Mr. Martin,

On behalf of the United Auburn Indian Community, Tribal Historic Preservation Department, thank you for the notification and opportunity to comment on the amendments to the American Watershed Common Features Project. In order for us to accurately provide comments, please provide us with shapefiles of the new areas that will be included in the amended EIS so we may review if any culturally sensitive areas will be impacted.

Lastly, please update your contact information for UAIC. Jason Camp is no longer the THPO. Matthew Moore now is.

Thank you,
Anna

Anna M. Starkey, M.A., RPA
Cultural Regulatory Specialist
Tribal Historic Preservation Department| UAIC
10720 Indian Hill Road
Auburn, CA 95603
Direct Line: (916) 251-1565 | Cell: (530) 863-6503
astarkey@auburnrancheria.com |www.auburnrancheria.com

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

November 30, 2022

Via email ARCF_SEIS@usace.army.mil

Guy Romine
U.S. Army Corps of Engineers, Sacramento District
Attn: Environmental Analysis Section (CESPK–PDR–A)
1325 J Street
Sacramento, CA 95814

Subject: EPA's Scoping Comments on the draft Supplemental Environmental Impact Statement (SEIS)/Subsequent Environmental Impact Report (SEIR) to the 2016 American River Watershed Common Features (ARCF) Final Environmental Impact Statement/ Environmental Impact Report (FEIS/FEIR), Sacramento County, California

Dear Mr. Romine:

The U.S. Environmental Protection Agency has reviewed the Corps' notice to initiate a supplemental environmental analysis for the above referenced project. The EPA's comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508) and our NEPA review authority under Section 309 of the Clean Air Act.

The enclosed detailed comments are provided to assist in the development of a Supplemental Draft Environmental Impact Statement. The EPA recognizes the need for flood control in this highly urbanized area and welcomes this process as an opportunity to evaluate and minimize the impacts of existing and future projects on the regional environment. The Notice of Intent states that the Corps will look at Lower American River and State Route 160 Bridge area design refinements, new staging and haul routes, levee realignments in the Magpie Creek area, and a mitigation plan to address additional compensatory mitigation needed. We appreciated the clarifications provided at the public meeting held November 2, 2022 regarding the scope of the supplemental analysis. We recommend updating any additional direct, indirect, and cumulative impacts to water and biological resources not covered in the 2016 ARCF EIS and addressing unhoused communities and additional compensatory mitigation needed due to design changes.

We appreciate the opportunity to provide comments on this scoping notice and look forward to continued participation in the NEPA process. If you have any questions, please contact me at (415) 972-3742 or truitt.robin@epa.gov.

Sincerely,

ROBERTA TRUITT
Digitally signed by ROBERTA TRUITT
Date: 2022.11.30 15:43:40 -08'00'

Robin Truitt
NEPA Environmental Review Branch

Enclosure: EPA's Detailed Scoping Comments

U.S. EPA DETAILED SCOPING COMMENTS ON THE SUPPLEMENTAL EIS FOR THE AMERICAN RIVER COMMON FEATURES PROJECTS, SACRAMENTO COUNTY, CALIFORNIA – NOVEMBER 30, 2022

Alternatives Analysis

The EPA recommends that the Corps explore and objectively consider a full range of alternatives and evaluate in detail all reasonable alternatives that fulfill the project's purpose and need and regulatory requirements. For example, there could be various bank and levee protection designs that could be employed, alone or in combination, that maximize environmental benefits or ecological components, structures and functions while also reducing risk of life and property loss from a large flood event. It would be useful to present various bank erosion and levee protection methods together to compare those analyzed in the 2016 ARCF FEIS/FEIR (e.g., conventional riprap or rock and bank revetments[1]) with the proposed use of launchable toe protection and tie backs, and/or with bio-technical techniques that integrate riparian restoration for riverbank stabilization. Such comparisons would more sharply define the issues and provide a clear basis for choice among options by decision-makers (40 CFR 1502.14 (b)).

Describe how each alternative was developed, how it addresses project objectives, and how it will be implemented. Quantify the potential environmental impacts of each alternative to the greatest extent (e.g., acres of habitat impacted and mitigation needed) and clearly delineate differences in impacts between alternatives analyzed. We also recommend comparing the costs and benefits of each of the alternatives, including the costs for required mitigation measures. Further, discuss reasons for eliminating alternatives to the proposed action (40 CFR 1502.14 (a)).

Scope of Assessment and Impacts Analysis

In the Supplemental Draft EIS, include and describe all connected actions (40 CFR 1501.9(e)(1)). The Council on Environmental Quality Regulations also require analysis of "reasonably foreseeable environmental trends and planned actions in the area." Analysis of impacts should also consider "effects that are later in time or farther removed in distance from the proposed action or alternatives."

EPA recommends describing the threat to resources as a whole, presented from the perspective of the resource instead of from the individual project. Identify how resources, ecosystems, and communities in the vicinity of the project have already been, or will be, affected by past, present, or future activities in the lower portions of the Sacramento and American River watersheds. The Supplemental Draft EIS should also consider the combined impacts associated with these activities the area and the potential impacts on various resources, characterized in terms of their response to change and capacity to withstand multiple stressors.

Describe a suite of potential mitigation measures, under the jurisdiction of the Corps and project sponsors, that will serve to alert other agencies or officials about potential protective measures that can be implemented. For this Supplemental DEIS, we specifically recommend that the Corps focus its analysis on riparian habitat, biological and aquatic resources, and threatened or endangered species that are at risk or be significantly impacted by the proposed project before mitigation.

Baseline Environmental Conditions

When evaluating project effects, we recommend using existing environmental conditions as the baseline for comparing impacts across all alternatives, including the no action alternative. This provides an important frame of reference for quantifying and/or characterizing magnitudes of effects and

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[1] See priorities of the Salmonoid Recovery Plan in NMFS' 2021 Biological Opinion at pg. 60

understanding each alternative's impacts and potential benefits. This is particularly important when there are environmental protections in place that are based on current conditions, such as total maximum daily loads (TMDLs), for impaired stream segments.

The Supplemental Draft EIS should present impacts to resources as a comparison to the existing conditions baseline using a consistent method of measuring project impacts for all alternatives. By utilizing existing environmental conditions as a baseline, future changes to environmental resources can be more accurately measured. We recommend that the Corps consider the following when defining baseline conditions:

- Verify that historical data (e.g., data five years or older) are representative of current conditions.
- Compare historical data with the most recent water quality and quantity information and any predictive models that show what might occur under various conditions or trends.
- Include resources directly impacted by the project footprints within the geographic scope of analysis, as well as the resources indirectly (or secondarily) impacted by the projects (40 CFR 1508.1(g)(1)).

Climate Change
We recommend that the Supplemental Draft EIS consider how climate change could potentially influence the study area. Include anticipated changes to the watershed in terms of quantity and timing of snowpack, runoff, and precipitation and how these changes may impact hydrology and riparian habitats in the project area, project operations and maintenance, and long-term mitigation success. Discuss how implementation of the proposed projects could lessen or potentially mitigate for these impacts.

Water Resources
The Supplement Draft EIS should provide a complete hydrologic characterization of the project vicinity and the cumulative impact area. We recommend that the Corps incorporate by reference and summarize the 2016 ARCF FEIS/FEIR analysis of water quality, including collection of dissolved oxygen, temperature, and other parameters that are considered seasonal or naturally occurring. These data may be used for comparison to changes in water quality as a result of current conditions or project actions.

Discuss all direct, indirect, and cumulative impacts to surface water and groundwater quality and quantity from the proposed project and alternatives both during construction and in operations. Describe all potential project discharges, seepage, temporary ponding, diversions, as well as the potential effects of these activities on water quality and flow and other beneficial uses.

Focus on potentially significant threats to surface waters from existing conditions and proposed management actions, including the suspension and transport of sediments or substrates. Discuss the potential for increased (or decreased) runoff of sediments and pollutants, impacts to riparian areas downstream, the potential for erosion, the potential impact to drinking water intakes, and changes in stream flow, substrate, dissolved oxygen, and temperature. Identify and evaluate measures which could reduce these impacts for each design or engineering alternative and commit to these measures as part of the project.

Aquatic Resources, Wetlands and Riparian Areas
In the Supplemental Draft EIS, describe aquatic habitats in the project area (e.g., habitat type, plant and animal species, functional values, and integrity) and the environmental consequences of the proposed alternatives on these resources. Impacts to aquatic resources should be evaluated in terms of the areal (acreage for wetlands) or linear extent (for streams) to be impacted and by the functions they perform.

To support a LEDPA determination, conduct a formal and reproducible assessment of the condition of aquatic resources in the reservoir footprint using an approved conditional assessment such as the California Rapid Assessment Method (CRAM).[2]

Biological Resources, Habitat, and Wildlife

Compensatory Mitigation

In the summer of 2021, EPA echoed the concerns[3] of the USFWS and NMFS regarding the ability of planting benches built atop launchable flood features to provide long term, on-site mitigation if they launched due to bank erosion or scouring from flood events because they had not been used before for bank or levee protection on the Sacramento or American Rivers. Once launched, as designed, exposed rip-rap rock could reduce riparian vegetation and native habitat function and reduce fish habitat and food availability throughout the entirety of the action area (See e.g., NMFS BO p. 79). In the Biological Opinions, both NMFS and the USFWS requested that the Corps provide more information on these launchable flood protection features and address the durability of the mitigation (NMFS BO p. 108; USFWS BO p. 26). To account for the potential loss of on-site mitigation, the Corps committed to adding 4 acres of additional mitigation over the 50-year life of the project and would create a balance between open water and bench habitat.[4]

The EPA recommends that the Supplemental EIS incorporate the findings of the Biological Assessment (to be released in December 2022) and consultations into its analysis and discuss which proposed design features or alternatives will be counted, or discounted, as long-term compensatory mitigation. Specifically discuss how the 4 acres of additional compensatory mitigation associated with the launchable features in LAR Contract 2 were calculated or could be replicated as applied to the launchable rock toes or trenches proposed here.

Mitigation Plan and Long-Term Management

The Notice of Intent mentions the identification and construction of new mitigation sites. The EPA is not aware of any CWA Section 404 or ESA credits available presently at mitigation banks in the Lower American River area, although credits may be available through the National Fish and Wildlife Federation Sacramento District In-Lieu Fee Program or may become available at proposed banks. The EPA recommends that the Supplemental Draft EIS:

- Propose a Mitigation Plan that identifies and quantifies which species and/or aquatic resources might be directly, indirectly, or cumulatively affected by each alternative and mitigate impacts to these habitats. Emphasis should be placed on the protection and recovery of species due to their status or potential status under the federal or state Endangered Species Act, and compensation for impacted aquatic resource functions and values. It should discuss the types of mitigation needed and types/sites of compensatory mitigation available. The Mitigation Plan should also identify responsible parties, and funding mechanisms to be used. It would evaluate (and quantify if feasible) potential mitigation measures and their effectiveness at mitigating impacts to loss of habitat. Discuss any limitations or drawbacks of these mitigation measures, and address how their effectiveness will be implemented, monitored, and enforced.

[2] California Wetland Monitoring Workgroup (CWMW). 2019. Using the California Rapid Assessment Method (CRAM) for Project Assessment as an Element of Regulatory, Grant, and other Management Programs. Technical Bulletin – Version 2.0, 85 pp. https://www.cramwetlands.org/sites/default/files/2019CRAM_TechnicalBulletin.pdf

[3] EPA comments on the LAR Contract 2, dated July 19, 2021.

[4] Public meeting of Nov. 2, 2022

- Include a Long-Term Management Plan that adapts mitigation measures to future hydrologic and geomorphic conditions within the system of approved projects in the 2016 American River Common Features Final EIS/EIR and update the Habitat Mitigation Monitoring and Adaptive Management Plan in coordination with NMFS and USFWS. Discuss remedial actions to be taken if on-site mitigation is compromised in the future. Remedial actions may include replanting, creation of additional off-site habitat, or purchase of mitigation bank credits. Include adaptive management responses, such as mitigation ratios, success criteria, monitoring, and maintenance, to future potential impacts of launchable rock events on riparian and fish habitat, including.

- The proposed project will impact a variety of resources for an extended period of time. As a result, we recommend that the project be designed to include an environmental inspection and monitoring program to ensure compliance with all mitigation measures and assess their effectiveness. In the Supplemental Draft EIS, describe the monitoring program and how it will be used as an effective feedback mechanism (i.e., adaptive management) so that any needed adjustments can be made to the project to meet environmental objectives throughout the life of the project. Discuss adaptive management monitoring programs that will be implemented before and after the proposed actions to determine potential impacts on plant and wildlife species, especially species classified rare, threatened, or endangered on either state or federal lists. Describe a mechanism or process that could be used to consider and implement additional mitigation measures.

- Include as appendices to the Supplemental Draft EIS the most recent biological assessment (informal consultation). Summarize the biological opinions of the resource agencies (formal consultation) and demonstrate that the preferred alternative is consistent with these assessments or opinions. Discuss the project's consistency with other existing laws and regulations, including the Migratory Bird Treaty Act.

We recommend providing clear commitments to carry out proposed mitigation measures identified in the Supplemental Draft EIS, or as otherwise established. Joe Morgan of EPA's Wetlands and Oceans Section is available to provide expertise and assistance on the development of Mitigation or Long-Term Management Plans. He can be reached at 415.972.3309 or by email at Morgan.Joseph@epa.gov.

Invasive Species

In Supplemental Draft EIS, include measures that are consistent with Executive Order 13112 on Invasive Species. We suggest including any existing agency direction for noxious weed management, a description of current conditions, and best management practices, which will be utilized to prevent, detect, and control invasives in the project area. Discuss measures that would be implemented to reduce the likelihood of introduction and spread of invasive species within the proposed project area. We encourage the Corps and local sponsors to promote integrated weed management, with prioritization of management techniques that focus on non-chemical treatments first, and mitigation to avoid herbicide transport to surface or ground waters. Early recognition and control of new infestations is critical to stop the spread of the infestation and avoid wider future use of herbicides, which could correspondingly have more adverse impacts on biodiversity, water quality and fisheries.

Environmental Justice

In the Spring of 2022, the Corps issued interim Environmental Justice implementation guidance and initiatives into the civil works program designed to build climate-resistant infrastructure that protects communities and ecosystems. The policy encourages environmental justice and disproportionate impacts to disadvantaged communities be considered in all phases of project planning and decision-making and the

USACE is directed to initiate outreach and engage disadvantaged communities early in the process to identify and address problems. In addition, Executive Order 12898, "*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*" (February 16, 1994), directs federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations. It further directs agencies to develop a strategy for implementing environmental justice and providing minority and low-income communities access to public information and public participation. As such, the Corps should address adverse environmental effects of the proposed project on these communities and outline measures to mitigate for impacts.

In the Corps' preparation of the environmental justice analysis, we encourage consideration of two specific resources: 1) CEQ's *Environmental Justice: Guidance Under the National Environmental Policy Act* report[5] and 2) the Federal Interagency Working Group on Environmental Justice and NEPA Committee's *Promising Practices for Environmental Justice Methodologies in NEPA Reviews* report.[6] These documents provide information on applying environmental justice methodologies that have been established in federal NEPA practice. Further, it may be useful to use EPA's EJ Screen[7] and/or the most recent American Community Survey from the U.S. Census Bureau (i.e., Five-Year Date Profile Estimates for 2013-2019. To best illustrate the presence of a minority population, we recommend that the Corps analyze block groups, the smallest geographical unit for which the U.S. Census Bureau publishes data. We caution using larger tracts in the analysis, such as counties, to the extent they may dilute the presence of low income or minority populations.

However, some USACE Districts have expanded the EJ analysis[8] to address the displacement of unhoused communities along levees and in floodplains in and around the study area as these common areas of refuge may create erosion, habitat destruction, maintenance, and sanitary issues. People living there are more at-risk as they likely lack the resources and means to evacuate quickly and establish safer living situations. In the Upper Guadalupe Project report, the Corps used the City of San José's Homeless Census figures to illustrate the rising numbers of unsheltered persons, the nature of the problem, and committed to engaging and supporting the city in its efforts to relocate unhoused communities to places outside of the flood hazard zone and improve life safety. Discuss these matters in the Supplemental Draft EIS and to support any finding of 'no disproportionate impact," estimate the number of individuals who could be impacted by construction activities and describe what would happen to the unhoused after removal.

After the Corps has determined if minority and low-income populations reside in the project area, we recommend that the Draft EA or EIS discuss whether these communities would be potentially affected by individual or cumulative actions of the proposed action. We also recommend addressing whether any of the alternatives or construction access limits would cause any disproportionate adverse impacts, such as higher exposure to toxins; changes in existing ecological, cultural, economic, or social resources or access; cumulative or multiple adverse exposures from environmental hazards; or community disruption.

[5] See https://www.epa.gov/sites/production/files/2015-02/documents/ej_guidance_nepa_ceq1297.pdf.

[6] See https://www.epa.gov/sites/production/files/2016-08/documents/nepa_promising_practices_document_2016.pdf

[7] EJScreen is an online mapping tool that can aid the agencies in developing outreach for EJ communities. The tool is available at https://ejscreen.epa.gov/mapper/.

[8] See, e.g., the November 2022 Upper Guadalupe River Flood Risk Management Project Draft General Reevaluation Report and Supplemental Environmental Assessment.

Present opportunities for affected communities to provide input into the NEPA process. In the Draft EA or EIS, include information describing what was done to inform these communities about the project and the potential impacts it will have on their communities (notices, mailings, fact sheets, briefings, presentations, translations, newsletters, reports, community interviews, surveys, canvassing, telephone hotlines, question and answer sessions, stakeholder meetings, and on-scene information), what input was received from the communities, and how that input was utilized in the decisions that were made regarding the project.

Traffic

The EPA understands that land side staging areas and haul routes to the staging areas were not analyzed for specific projects in the 2016 ARCF GRR FEIS/FEIR. The Supplemental Draft EIS should explain why barge work cannot be employed to avoid or minimize impacts to traffic, transportation, and noise. The Supplemental Draft EIS should also detail essential provisions in a Construction Traffic Management Plan that address circulation considerations, such as maintaining a minimum of one lane open to traffic in each direction at all times, restricting truck traffic on residential streets to only those streets where project activities occur, notifying impacted areas and transit agencies of alternate traffic and pedestrian routes and bus stops at least 72 hours prior to the start of construction work, and maximizing the use of major roadways and trucking routes for any detours or road closures.

Noise

In the Supplemental Draft EIS, discuss the need for extended nighttime work schedules and explain how noise impacts are avoided or minimized by performing the work at night. Typically, noise ordinances limit construction activities to certain daylight hours to prevent night-time disruption to nearby residents or other sensitive receptors - and it would be useful to explain reasons for any night work preferences to the community. Estimate noise levels from both landside and water side work. Discuss compliance with and City and County noise ordinances and what approvals would be needed to deviate from timing restrictions. Determine at what levels, and where, temporary barriers for noise reduction would be needed.

Air Quality

Green House Gas Emissions

The Supplemental Draft EIS should provide a discussion of ambient air conditions (baseline or existing), National Ambient Air Quality Standards and nonattainment areas, and potential air quality impacts of the proposed project for each alternative. In estimating criteria pollutant emissions for the analysis area, discuss the timeframe for release of these emissions through the license lifespan of the proposed project.

We note that the project area is in moderate nonattainment for PM_{10}; therefore, we recommend the following measures to mitigate construction emissions of fugitive dust, oxides of nitrogen, and volatile organic compounds and to include these measures in all construction contracts.

Fugitive Dust Source Controls:

- Stabilize disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both active and inactive sites during workdays, weekends, holidays, and windy conditions.
- Phase grading operations where appropriate and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph.

Mobile and Stationary Source Controls:

- Reduce unnecessary idling from heavy equipment.
- Prohibit engine tampering to increase horsepower, unless within the manufacturer's specifications.
- Lease or buy newer, cleaner equipment using the best available emissions control technologies.
- Use lower-emitting engines and fuels, including electric, liquified gas, hydrogen fuel cells, and/or alternative diesel formulations, if feasible.
- *On-Highway Vehicles* - On-highway vehicles should meet, or exceed, the U.S. EPA exhaust emissions standards for model year 2010 and newer heavy-duty on-highway compression-ignition engines (e.g., drayage trucks, long haul trucks, refuse haulers, shuttle buses, etc.).[9]
- *Nonroad Vehicles & Equipment* - Nonroad vehicles and equipment should meet, or exceed, the U.S. EPA Tier 4 exhaust emissions standards for heavy-duty nonroad compression-ignition engines (e.g., nonroad trucks, construction equipment, cargo handlers, etc.).[10]

Administrative Controls:

- Coordinate with appropriate air quality agencies to identify a construction schedule that minimizes cumulative impacts from other planned projects in the region, to the extent feasible.
- Prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking.[11]
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow and avoid routing truck traffic near sensitive land uses to the fullest extent feasible.
- Locate diesel engines, motors, and equipment staging areas as far as possible from residential areas and other sensitive receptors (e.g., schools, daycare centers, hospitals, senior centers, etc.).
- Reduce construction-related trips of workers and equipment, including trucks.
- Identify all commitments to reduce construction emissions and quantify air quality improvements that would result from adopting specific air quality measures.
- Identify where implementation of mitigation measures is rejected based on economic infeasibility.

Consultation with Tribal Governments

It is important that formal government-to-government consultation take place early in the scoping phase of the project to ensure that all issues are adequately addressed in the Draft EA or EIS. The principles for interactions with tribal governments are outlined in the presidential "Memorandum on Government-to Government Relations with Native American Tribal Governments" (April 29, 1994) and Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments" (November 6, 2000). As a resource, we recommend the document *Tribal Consultation: Best Practices in Historic Preservation,*[12] published by the National Association of Tribal Historic Preservation Officers. EPA Region 9 has a robust tribal program. If you need assistance with consultation or updated tribal contacts, please contact John (JR) Herbst at (619) 235-4787 or herbst.john@epa.gov.

[9] See https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100O9ZZ.pdf.

[10] See https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OA05.pdf.

[11] Suitability of control devices is based on whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.

[12] National Association of Tribal Historic Preservation Officers. May 2005. Tribal Consultation: Best Practices in Historic Preservation. Available at http://www.nathpo.org/PDF/Tribal_Consultation.pdf.

In the Draft EA or EIS, summarize the results of tribal consultation and identify the main concerns expressed by tribes (if any), and how those concerns were addressed. We also recommend identifying any protection, mitigation, and enhancement measures identified by tribes.

National Historic Preservation Act

Consultation for tribal cultural resources is required under Section 106 of the National Historic Preservation Act. Historic properties under NHPA are properties that are included in the National Register of Historic Places or that meet the criteria for NRHP. Section 106 of NHPA requires a federal agency consider the effects of their actions on cultural resources, following the regulation at 36 CFR 800, and upon determining that activities under its control could affect historic properties, to consult with the appropriate State Historic Preservation Office/Tribal Historic Preservation Office. Under NEPA, any impacts to tribal, cultural, or other treaty resources must be disclosed.

In the Supplemental Draft EIS, discuss how the Corps would avoid or minimize adverse effects on the physical integrity, accessibility, or use of cultural resources or archaeological sites, including traditional cultural properties (TCPs), throughout the project area. Clearly discuss mitigation measures for archaeological sites and TCPs. We encourage the Corps to append any Memoranda of Agreements to the Supplemental Draft EIS, after redacting specific information about these sites that is sensitive and protected under Section 304 of NHPA. We also recommend providing a summary of all coordination with tribes and with the SHPO/THPOs, including identification of NRHP eligible sites and development of a Cultural Resource Management Plan.

Executive Order 13007, "*Indian Sacred Sites*" (May 24, 1996), requires federal land managing agencies to accommodate access to, and ceremonial use of, Indian sacred sites by Indian religious practitioners, and to avoid adversely affecting the physical integrity, accessibility, or use of sacred sites. It is important to note that a sacred site may not meet NRHP criteria for a historic property and that, conversely, a historic property may not meet the criteria for a sacred site. It is also important to note that sacred sites may not be identified solely in consulting with tribes located within geographic proximity of the project. Tribes located outside the direct impact area the plan area may also have religiously significant ties to lands within the plan area and should be included in the consultation process.

Address the existence of any Indian sacred sites in the project area that may be considered spiritual sites by regional tribal nations. Discuss how the Corps would ensure that the proposed action would avoid or mitigate for the impacts to the physical integrity, accessibility, or use of sacred sites.

SACRAMENTO METROPOLITAN

AIR QUALITY
MANAGEMENT DISTRICT

November 10, 2022

Guy Romine
U.S. Army Corps of Engineers, Sacramento District
Attn: Environmental Analysis Section (CESPK-PDR-A)
1325 J Street
Sacramento, CA 95814
ARCF_SEIS@usace.army.mil

Subject: Notice of Intent to Prepare a Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report for the 2016 American River Watershed Common Features General Reevaluation Report Final Environmental Impact Statement/Final Environmental Impact Report (SAC201301442)

Dear Guy Romine:

Thank you for informing the Sacramento Metropolitan Air Quality Management District (Sac Metro Air District) of the U.S. Army Corps of Engineers' Notice of Intent to Prepare a Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report (DSEIS/SEIR) for the 2016 American River Watershed Common Features (ARCF) General Reevaluation Report (GRR) Final Environmental Impact Statement/Environmental Impact Report[1]. The intent of the DSEIS/SEIR is to analyze potential significant impacts from changes made during final preliminary design of multiple segments of the ARCF project, including Lower American River erosion protection methods, State Route 160 Bridge, Sacramento River erosion design refinements, Magpie Creek, and mitigation site actions and potential expansion. The California Health and Safety Code requires the Sac Metro Air District to represent the residents of Sacramento County in influencing the decisions of other agencies whose actions may have an adverse impact on air quality. In that context, Sac Metro Air District staff provides the following recommendations.

Utilize Sac Metro Air District's *Guide to Air Quality Assessment in Sacramento County*[2] (CEQA guide) to inform the air quality and greenhouse gas analyses and to determine if the project changes will have significant impacts. The CEQA guide includes screening criteria, thresholds of significance, methods for analysis, mitigation strategies, and best management practices for reducing emissions and exposure.

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[1] U.S. Army Corps of Engineers, ARCF GRR Final EIS/EIR, December 2015: https://www.spk.usace.army.mil/Portals/12/documents/civil_works/CommonFeatures/ARCF_GRR_Final_EIS-EIR_Jan2016.pdf

[2] Sac Metro Air District CEQA Guide: https://www.airquality.org/Businesses/CEQA-Land-Use-Planning/CEQA-Guidance-Tools

All air quality and greenhouse gas mitigation measures and environmental commitments adopted for the ARCF GRR and the General Conformity Determination[3] (GCD) should be incorporated into the DSEIS/SEIR. If any measures or commitments are found to be outdated, infeasible, or in conflict, they should be updated prior to being incorporated.

The analysis should disclose if the project changes will impact the GCD. If necessary, Army Corps should update the GCD to ensure the project will not hinder ozone attainment efforts in the Sacramento region.

Increased trucking activity and the area needed for staging equipment can create conflicts with bicycle travel, pedestrian pathways, and transit stops. Safe, convenient, clearly marked alternative routes should be determined with input from the surrounding communities and local agencies to ensure commute trips by active modes are not discouraged during project construction.

Please provide the notice of the availability of the DSEIS/SEIR by sending an email to projectreview@airquality.org. You may contact me if you have any questions regarding these recommendations at khuss@airquality.org or 279-207-1131.

Sincerely,

Karen Huss

Karen Huss
Associate Air Quality Planner / Analyst

cc: Paul Philley, AICP, CEQA & Land Use Program Supervisor, Sac Metro Air District

[3] U.S. Army Corps of Engineers, ARCF GRR Final General Conformity Determination, June 2021: https://www.spk.usace.army.mil/Portals/12/documents/civil_works/CommonFeatures/WRDA16/Documents/ARCF16_Final-GenConform_Determination-w-AppendixA_Jun2021.pdf?ver=56b3EYmyrsKSWSzYI5ncsQ%3d%3d

Regional Parks Department
Liz Bellas, Director

Divisions
Administration
Golf
Leisure Services
Maintenance
Rangers
Therapeutic Recreation Services

County of Sacramento

December 30, 2022

Mr. Guy Romine
Attn: Environmental Analysis Section (CESPK-PDR-A)
U.S. Army Corps of Engineers, Sacramento District
1325 J Street
Sacramento, California 95814

Subject: Notice of Intent to Prepare a Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report for the 2016 American River Watershed Common Features Project, Sacramento CA

Mr. Romine,

In October the U.S Army Corps of Engineers (USACE) issued a Notice of Intent (NOI) to prepare a Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report (SEIS/SEIR) for the 2016 American River Watershed Common Features Project (ARCF), Sacramento CA. This NOI "commences the public scoping process to identify issues and potential alternatives for consideration in the SEIS/SEIR." During this process, "Federal agencies, Tribal, State and local governments and the general public have the opportunity to help USACE determine significant resources and issues, impact producing factors, reasonable alternatives, and potential mitigation measures to be analyzed in the SEIS/SEIR." The Sacramento County Department of Regional Parks (Regional Parks) appreciates this opportunity to assist USACE in determining reasonable alternatives for analysis in the SEIS/SEIR, particularly with respect to the location, design, and construction of "dedicated mitigation facilities" in the American River Parkway (ARP) as necessary to fulfill the mitigation commitments set forth in the ARCF General Re-evaluation Report Final EIS/EIR.

The NOI provides no details on such facilities. Based on a presentation by USACE to Regional Parks on August 31, 2022, it appears that the mitigation effort for American River impacts is focused in large part on the privately owned Urrutia property, an abandoned sand and gravel mine occupying 120 acres in the Discovery Park area of the American River Parkway. The Sacramento Area Flood Control Agency (SAFCA) is currently seeking to acquire this property. As we noted to USACE following their presentation, Regional Parks strongly supports use of the Urrutia site for ARCF Project mitigation. However, we have been reluctant to weigh in on the landscape design alternatives that should be considered until SAFCA completes the due diligence phase of its negotiation with the property owners. Issuance of the NOI has changed this calculus. In response to USACE's formal request for assistance in identifying reasonable alternatives for the site, we offer the following observations.

First, public use of the Urrutia property is governed by the goals and policies of the 2008 American River Parkway Plan (Parkway Plan). The Area Plan for the Discovery Park area of the Parkway calls for acquiring the property and reclaiming and restoring it to enhance its fish and wildlife value, accommodate historical and cultural interpretive activities, including demonstrations of California Native American culture, and support picnicking, hiking and wildlife viewing. The Area Plan further identifies improvements that should be created to support these purposes and, based on the assumption that the site's existing open water pond will remain post-acquisition, provides that boating and fishing may be allowed for interpretive purposes only by permit at the discretion of the Parkway Manager.

The Parkway Plan states that habitat restoration, local drainage, public utilities and flood control facilities, as determined to be appropriate to and permitted within a Wild and Scenic Rivers corridor, are permitted in all land use categories. Hence use of the Urrutia property for habitat mitigation would not require changes in the existing land use designations for the property. On the other hand, the Parkway Plan provides that any physical development proposal which is not consistent with the approved Area Plan in which the development would occur should not proceed to the contract drawing stage until the proposal has been approved in accordance with the planning and development process spelled out in Chapter 11 of the Parkway Plan.

As indicated in our last meeting with USACE, habitat improvement concepts for the Urrutia site are currently under development. It is our understanding that these concepts are aimed at meeting the following ARCF Project mitigation needs at the site:

- Approximately 62 acres of floodplain habitat that could be provided by breaching the berm that currently separates the Urrutia pond from the river and filling a portion of the pond to achieve landscape elevations suitable for seasonal inundation to support fish rearing. This habitat type would also provide riparian canopy to offset the approximately 31 acres needed to mitigate for the Yellow-billed Cuckoo riparian canopy impacts; and
- Approximately 38 acres of less frequently inundated Valley Elderberry Longhorn Beetle (VELB) habitat that could be provided by filling the remainder of the pond to match the landscape elevations currently surrounding the pond.

All of the concepts presented to Regional Parks envision complete elimination of the existing 58 acre pond with one exception which shows preservation of a small pond (approximately 8 acres) connected to the river that is intended to provide functional open water habitat values similar to the values currently associated with the isolated pond. Each of these concepts indicate that approximately 70-80 acres of floodplain habitat would be created to offset the needed mitigation.

While filling in the isolated Urrutia pond would eliminate an existing fish stranding risk that arises when flows in the American River and/or Bannon Slough are high enough to spill water and fish into the pond the physical change would extinguish the wildlife habitat, interpretive, and wildlife viewing values associated with the existing pond. Whether and to what extent these values could be preserved by including a small river connected embayment in the design has yet to be determined. In any case, the consequences of eliminating a unique wildlife habitat feature in order to protect a vulnerable fish population from periodic stranding; or alternatively preserving this unique habitat and mitigating but not eliminating the existing stranding risk need to be fully evaluated. Without such an evaluation, decision makers will not be able to make a reasoned determination as to what physical changes to the Urrutia site make the most sense in light of the goals and policies of the Parkway Plan.

The process for making this determination is described in the Implementation chapter of the Parkway Plan. Any physical change which involves a modification to an existing Area Plan is subject to a public hearing process involving the County Recreation and Parks Commission and the County Planning Commission each of which must review the proposed modification and provide its recommendation to the County Board of Supervisors which is the ultimate local authority for all matters related to the planning and management of the Parkway. As part of the project review process, Regional Parks is responsible for ensuring that proposed projects are designed to first, avoid adverse environmental impacts; second, minimize adverse environmental impacts; and third, replace, repair, or restore adversely impacted resources as close as feasible in time and place to the impact. Impacts include but are not limited to aesthetics, recreational facilities and access points, water quality, soils, and all biological resources. Noise, air quality (including fugitive dust) and other impacts associated with construction are also impacts to avoid, minimize, and mitigate. In carrying out this responsibility, Regional Parks may request project proponents to consider modifications and/or alternatives to proposed projects that would minimize impacts to existing Parkway resources or reduce construction related impacts in a manner that Regional Parks deems to be consistent with the Parkway Plan.

In this instance, Regional Parks believes it would be appropriate for USACE to consider at least one habitat enhancement alternative for the Urrutia site that preserves a substantial portion of the isolated pond. Such an alternative was developed as part of the Urrutia planning process spearheaded by USACE at the end of 2021 (see attached figures). Under this alternative, the offsite floodplain habitat needs of the ARCF Project would be achieved and there would space remaining on the Urrutia property to provide a small portion of the VELB habitat needs with the balance being placed at other locations in the Parkway (including land adjacent to the Urrutia property) that Regional Parks has identified as suitable and available for this purpose. This alternative would accommodate an isolated pond approximately 30 acres in size thereby preserving most of the wildlife habitat, interpretive, and wildlife viewing values associated with this feature of the Parkway and aligning more closely with the Parkway Plan policies applicable to the Urrutia site. The existing fish stranding risk could be lessened through the shrinkage of the pond and there would be opportunities for further minimization of this risk through site grading so as to direct Bannon Slough overflows away from the remnant pond and allow some escapement from the pond into Bannon Slough.

This alternative would not require substantial volumes of fill material to be brought to the site thereby eliminating many of the traffic, noise, and fugitive dust issues that would result from filling the entire pond. The isolated pond could serve as a discharge site for ponded water evacuated from the portion of the pond being filled with material to create floodplain habitat. This would allow the existing riverside berm to separate the construction area from the river and minimize the risk that sediment mobilized by construction activity could reach the American River and degrade its water quality. And retention of a substantial portion of the isolated pond would minimize the need to mitigate for the loss of the wildlife habitat values associated with this existing feature.

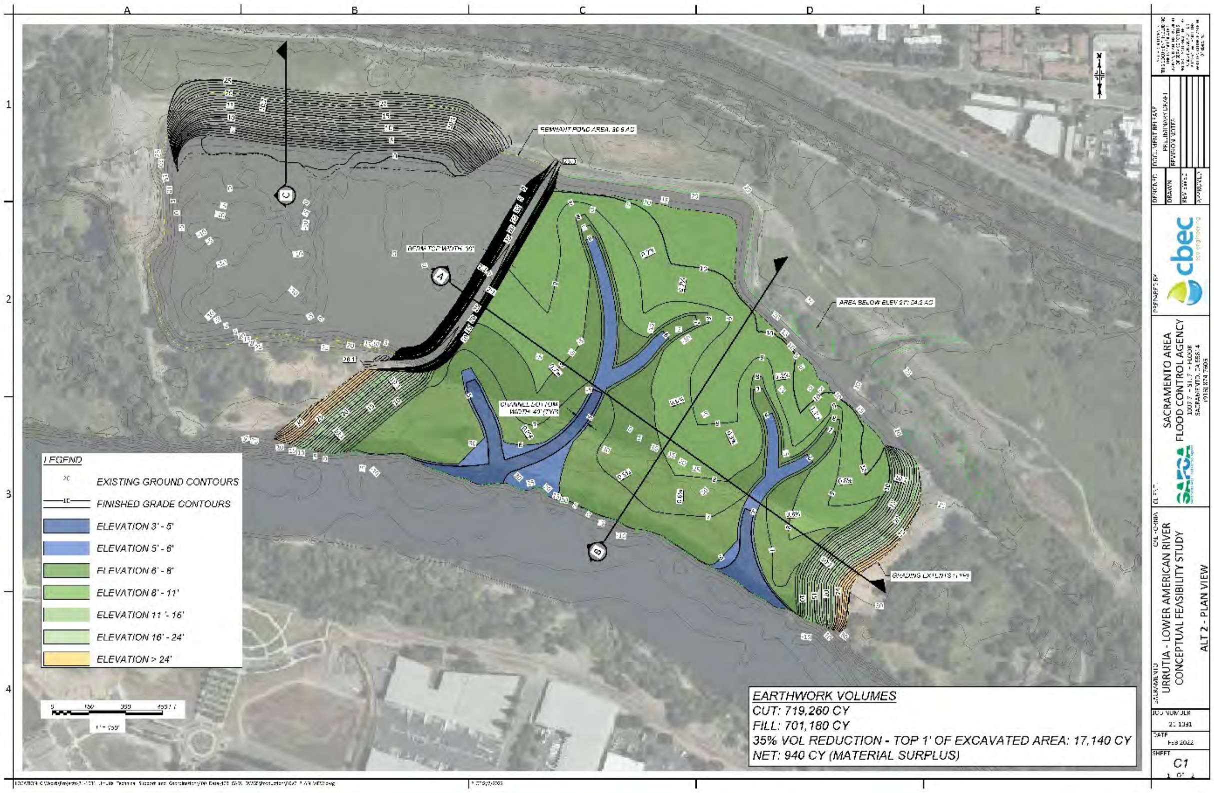
Regional Parks appreciates the importance of reducing stranding and predation of anadromous fish in the Parkway. Toward that end, the Parkway Plan declares that "minor grading and dredging should be conducted to provide positive drainage from floodplain ponds to the low flow channel of the American River" (Policy 3.12). In this instance, the need for off-site mitigation in connection with USACE's ongoing bank stabilization program in the Parkway has created an opportunity to eliminate a long-standing fish stranding risk. However, the scale of the physical changes being contemplated for the Urrutia site go far beyond minor grading and dredging and therefore warrant a careful consideration of the resulting impacts to the Parkway. This consideration should include a full exploration of alternatives, including the alternative of preserving a substantial portion of the existing isolated pond at the site to ensure alignment with the goals and policies of the Parkway Plan.

Regional Parks strongly supports use of the Urrutia site for ARCF Project mitigation, specifically for impacts occurring along the American River, in consideration of the above discussion. We look forward to continued engagement, coordination, and collaboration associated with the USACE efforts along the ARP.

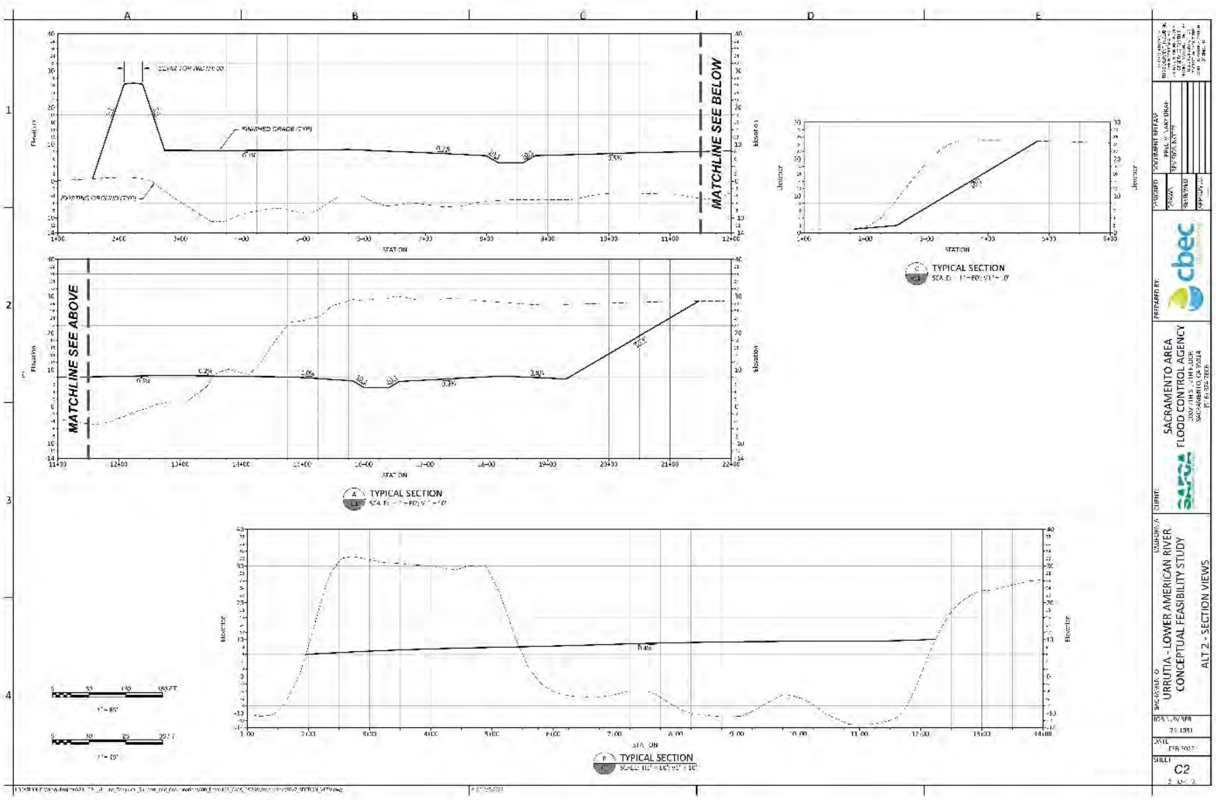
Cordially,

Liz Bellas,
Director of Regional Parks

cc:
Susan Rosebrough, National Parks Service



REMNANT POND AREA 36.6 AC
BERM TOP WIDTH: 30'
AREA BELOW ELEV 11': 24.5 AC
CHANNEL BOTTOM WIDTH: 40' (TYP)
GRADING EXTENTS (TYP)
LEGEND
EXISTING GROUND CONTOURS
FINISHED GRADE CONTOURS
ELEVATION 3' - 5'
ELEVATION 5' - 6'
ELEVATION 6' - 8'
ELEVATION 8' - 11'
ELEVATION 11' - 16'
ELEVATION 16' - 24'
ELEVATION > 24'
EARTHWORK VOLUMES
CUT: 719,260 CY
FILL: 701,180 CY
35% VOL REDUCTION - TOP 1' OF EXCAVATED AREA: 17,140 CY
NET: 940 CY (MATERIAL SURPLUS)
cbec
SACRAMENTO AREA FLOOD CONTROL AGENCY
URRUTIA - LOWER AMERICAN RIVER CONCEPTUAL FEASIBILITY STUDY
ALT 2 - PLAN VIEW
Feb 2022
C1



FINISHED GRADE (TYP)
EXISTING GROUND (TYP)
MATCHLINE SEE BELOW
MATCHLINE SEE ABOVE
STATION
Elevation
A TYPICAL SECTION
B TYPICAL SECTION
C TYPICAL SECTION
cbec
SACRAMENTO AREA FLOOD CONTROL AGENCY
URRUTIA - LOWER AMERICAN RIVER CONCEPTUAL FEASIBILITY STUDY
ALT 2 - SECTION VIEWS
C2

Cordova
Recreation & Park District

December 22, 2022

U.S. Army Corps of Engineers, Sacramento District
Attn: Guy Romine, Environmental Analysis Section
1325 J Street, Sacramento 95814

Sent via email to ARCF_SEIS@usace.army.mil :

Regarding: **American River Common Features Project (ARCF)**
Notice of Intent (NOI)
Intent to Prepare a Draft Supplemental Environmental Impact Statement (SEIS) in addition to a Draft Subsequent Environmental Impact Report (SEIR) XIV regarding the Lower American River Contracts 3B and 4A
Public Scoping Comment Period: October 31 - December 31, 2022

Reviewed by: Cordova Recreation and Park District

Laura Taylor, CRPD Park Planning and Development Manager
Lisbet Gullone, CRPD Contract Planner

Cordova Recreation and Park District (CRPD') is responding to a Notice of Intent from U.S. Army Corps of Engineers to prepare a Supplemental Environmental Impact Statement (SEIS) and a Subsequent Environmental Impact Report (SEIR) regarding the American River Common Features Project. Due to technical difficulties during the original Public Scoping Meeting on November 2, a second meeting was held on November 30, 2022 and the Public Scoping Period was extended to December 31, 2022.

Based on the slides presented during the NEPA Scooping Meeting (dated November 30, 2022) and an earlier released update regarding Contracts 1, 2 and 3A (slide presentation dated September 13, 2022), it is CRPD's understanding that the anticipated improvements along the American River will be limited to erosion control along the river side of existing levees.

As a part of the scoping meeting, Environmental Manager Nathaniel Martin introduced the following project partners:

- Corps of Engineers (lead agency for the NEPA process);
- Central Valley Flood Protection Board (lead agency for the CEQA Process); and
- Sacramento Area Flood Control Agency (cooperating agency)

CORDOVA RECREATION AND PARK DISTRICT (CRPD)
CRPD is the second largest Park and Recreation District in Sacramento County and was established in 1958. CRPD is independently funded and governed by a Board of Directors.

CRPD has jurisdiction over Quimby park land within its boundary. At this time CRPD manages 43 parks with a combined area over 600 acres. American River Parkway is located along CRPD's north boundary. It is CRPD's goal to provide all residential neighborhoods with easy access to park land and recreational facilities.

PARK IMPACTED BY AMERICAN RIVER LEVY UPGRADE PROJECT
Only one park within CRPD is directly affected by the American River Common Features project. This park is known as Larchmont Community Park and it serves the College Green East neighborhood. Among the existing park amenities are four soccer fields heavily used by local youth soccer programs, two tennis courts, a playground and a picnic area. Two soccer fields are located immediately adjacent to an existing levee. Parking for the park is provided at the west end of Stansberry Way and west of the park site is O. W. Erlewine Elementary School. Additional parking needs are satisfied by on-street parking along Linda Rio Drive and other local streets.

DISTRICT CONCERNS
Flood control is clearly an important concern for the Greater Sacramento area but it is also the CRPD's responsibility to maintain the level of recreational services required by the State and local governments. As a part of this effort, CRPD's Board of Directors serves as the decision-making body for major issues affecting the use of Quimby park land and the financing of new projects.

An exhibit for Contract 3B of the American River Common Features project shows that Larchmont Community Park as one of the potential staging areas for the levee improvement project. Before these plans can move forward, CRPD's Board of Directors will need to review and approve a construction easement and strategy that will minimize the interruption of park services within in the College Green East neighborhood.

ENVIRONMENTAL REVIEW
Recreation
During the scoping meetings on November 2 and November 30, the Corps of Engineers reported that additional analysis of Recreation will be included in the future SEIS/SEIR reports.

Use of Larchmont Community Park as a staging area will substantially disrupt the College Green East Neighborhood. Not only would all or some of the use of the park site be lost during levee construction and park restoration, but any use of the park would be impacted by noise, traffic, and dust.

CRPD's Recommendation:

- Analyze if staging areas could be limited to commercial and industrial sites along arterial/collector roads.

  If Larchmont Community Park remains one of the staging areas, CRPD recommends that the supplemental environmental reports should consider mitigation for the temporary loss of an active community park. Damage to the existing park infrastructure (asphalt parking lot, finish grade, irrigation, turf and trees) will require repair or replacement as part of the Common Features project. Restoration of the park as part of the construction project should be included in the project description and budgeting.

Identify how much of Larchmont Park is proposed for use during the Common Features project for access, staging and the construction process. Minimize the proposed impact to existing park infrastructure as much as possible.

Aesthetics and Visual Resources

The loss of trees and vegetation along the levees will have a substantial visual impact on the parkway and on Larchmont Community Park. As seen on the attached photo, large oaks are located close to the top of the levee that is facing Larchmont Community Park.

If flood lights are used to accommodate nighttime work this should also be considered a negative visual impact.

CRPD's Recommendations:

- Consider if the loss of vegetation on and adjacent to the levee can be mitigated by off-site planting.

  If mitigation planting is proposed within Larchmont Park a new planting plan must be reviewed and approved by CRPD.

Transportation and Circulation

During the construction of levees, traffic by heavy vehicles will increase and there may be fewer parking spaces available in the vicinity of project areas and around staging sites. The disruption of the use of the park and nearby residential neighborhoods would be minimized if, as much as possible, the construction traffic is limited to the existing levee roads.

CRPD's Recommendation:

- Consider ways to minimize the need for heavy vehicle traffic through Larchmont Park and adjacent residential neighborhoods.

  Construction traffic should be minimized around the co-located park and school site (Larchmont Park and O. W. Erlewine Elementary School). Whenever possible, the existing levee roads should be used to access construction sites.

Noise

The environmental studies for the American River Common Features project will need to consider noise from both construction and heavy vehicles.

CRPD's Recommendation:

- The noise generated by construction and heavy vehicles may have a negative impact on passive and programmed use of Larchmont Park.

  Consider if construction operations should be limited to certain hours to reduce impact to the use of the park and to the surrounding neighborhood.

Public Utilities and Services

Parks are part of the public services that are normally available in residential subdivisions. Citizen access to parks and recreation services during levee improvements and the subsequent park restoration will be restricted.

CRPD's Recommendation:

- Evaluate if the loss of recreational opportunities and park land will need to be mitigated.

Evaluate mitigation measures for the loss of recreational opportunities, loss of revenue to CRPD and local sport leagues, and the need for funding required to temporarily relocate the services.

ADDITIONAL PROJECT IMPACTS
As reported during the November 2 scoping meeting, Sacramento's flood control project has been fully funded through the bipartisan Budget Act of 2018. However, it is not clear if the restoration of staging areas have been considered as a part of the construction costs.

NEXT STEP
When the joint environmental document is prepared U.S. Army Corps of Engineers will be the lead agency for the SEIS document and the Central Valley Flood Protection Board will be the lead agency for the SEIR document.

FINAL THOUGHTS
CRPD welcomes the opportunity to provide feedback when alternative construction strategies are considered. This would allow CRPD's staff to update the General Manager and Board of Directors about how the levee project will impact Larchmont Community Park. Regular updates will be beneficial leading up to a requested Board action to approve a construction easement and funding agreement (if needed) for mitigation measures. It would also provide CRPD more time to plan for a disruption of park services.

Please contact CRPD's Park Planning & Development Manager Laura Taylor at 916.842.3319 or ltaylor@crpd.com for further discussions regarding the American River Common Features project.

Respectfully,

Laura L. Taylor

Laura L. Taylor, ASLA
Park Planning and Development Manager
Cordova Recreation and Park District
ltaylor@crpd.com

Copy: Patrick Larkin, General Manager for Cordova Recreation and Park District
Jill Nunes, CRPD Parks and Recreation Director
Matt Goodell, CRPD Finance Manager
Cristina James, CRPD Landscape Architect
Andrew Saltmarsh, CRPD Planning Technician

Attachment: View of Levee along Larchmont Park

From:	Chris Conard
To:	ARCF SEIS
Subject:	[URL Verdict: Neutral][Non-DoD Source] Comments on NOI for American River Common Features (ARCF) Supplemental EIS/Subsequent EIR
Date:	Friday, December 30, 2022 4:46:36 PM

December 30, 2022

Dear Guy Romine,
U.S. Army Corps of Engineers
Sacramento District,

I appreciate the opportunity to comment and request acknowledgement of the receipt of these comments by email at conardc@gmail.com

My comments on the NOI for the American River Common Features (ARCF) Supplemental EIS/Subsequent EIR will focus primarily on my concern that the existing habitat value of the Urrutia Pond site ("Quarry Pond") upstream of Discovery Park on the American River Parkway has not been carefully considered while it is planned as a means to meet mitigation requirements. During calls for input, there has been a varying degree of acknowledgement that the reconfiguration or even elimination of the pond to provide mitigation credit is contemplated. The Corps has not fully engaged on this topic during public scoping and information sharing, but it is clear from the public scoping meeting held on November 2, 2022 that there is a lot of interest from users and protectors of the Parkway that the existing habitat values of the Urrutia Pond be carefully taken into account.

There is a limited but consistent census of birds at the Urrutia Pond during the American River Natural History Association Wildlife Count (first weekend in December) and the Sacramento Christmas Bird Count (usually within a few days of December 20 each year). In response to plans that may drastically alter the site, more recent surveys have been performed by members of the Central Valley Bird Club, the Sacramento Audubon Society, and Save the American River Association.

We have found there is consistent and substantial use of off-channel habitat for night roosting of birds that use the lower American River during the day. Along the lower stretches of the Parkway, the Urrutia Pond is an important and unique feature for these species. As an illustration, nearly 300 Common Goldeneyes, over 100 Common Mergansers, and many other water birds have flown to the site in the late evening (details of one of the surveys are here: https://ebird.org/checklist/S124339712). Loss of this roosting site would likely reduce the use of the lower stretches of the American River by several species of water birds.

In earlier rounds of input for the American River Parkway Plan, I also stressed the importance of the site for periodic roosting and/or feeding by large numbers of Canvasbacks. Here is a sample of Canvasback numbers from surveys performed by Maureen Geiger of the Sacramento Audubon Society:

December 21, 2019	3,500
December 17, 2017	50
December 5, 2015	4,500
December 6, 2014	4,000
December 7, 2013	2,000

As the numbers above illustrate, there is a variable but consistently high number of Canvasbacks using this site for at least a decade (because of Covid-19 and access issues, there were no counts made in 2020 or 2021).

Recent surveys have also detected pairing and nest-tending by Bald Eagles in a tree immediately adjacent to the site, showing another benefit of this habitat.

The following species use still water and deeper water habitat, such as created by borrow pits, gravel pits, and other human activities. Despite their origins, these habitats have a lot of value and don't have natural analogs elsewhere on or immediately adjacent to the Parkway. On the lower stretch of the American River, the Urrutia Pond is unique in offering such habitat.

Canvasback
Ring-necked Duck
Bufflehead
Common Goldeneye
Barrow's Goldeneye
Hooded Merganser
Common Merganser
Ruddy Duck
Pied-billed Grebe
Eared Grebe
Western Grebe
Clark's Grebe
Double-crested Cormorant
American White Pelican
Caspian Tern
Forster's Tern
Great Blue Heron
Great Egret
Snowy Egret
Green Heron
Black-crowned Night-Heron
Osprey
Belted Kingfisher

Before major changes to the pond are contemplated, systematic surveys of the site should be undertaken. I am happy to provide additional input and data from future surveys as I learn more about this important habitat component along the lower American River. I have been performing regular bird surveys in the Sacramento region for over 20 years and

Thanks again for the opportunity to comment.

Chris Conard
2405 Rio Bravo Circle
Sacramento, CA 95826

From: Dan Meier
To: ARCF SEIS
Subject: [Non-DoD Source] ARCF SEIS/SEIR
Date: Thursday, December 29, 2022 2:16:48 PM

Public Affairs Office
Attn: ARCF SEIS
U.S. Army Corps of Engineers

Any mitigation sites to be considered under this environmental document should evaluate and document their suitability for specific habitat types. This evaluation and documentation is not included in the County's Natural Resource Management Plan (NRMP), nor is it adequate to simply state that these mitigation sites were selected by the USACE, CVFPB, and SAFCA in coordination with Sacramento County Department of Regional Parks. Maps must be provided showing habitat types by location. Also, specific documentation must be provided on key factors that were considered in evaluating habitat suitability such as soil analyses, hydrology, groundwater levels, flood, inundation frequency, habitat connectivity, and any other relevant factors.

The USACE has indicated that the Urrutia property may be included as a mitigation site in this environmental document. Due to the size and location of the Urrutia property, it is clearly a linchpin for mitigation/restoration on the Lower American River, and it's use by the USACE as a mitigation site is appropriate.

If the Urrutia property is included as a potential mitigation site to address USACE American River Commons impacts, then a Conceptual Naturalization Plan must be developed for the Urrutia property consistent with recommendations of the Final Draft of the Lower American River NRMP. This Conceptual Naturalization Plan needs to be developed by County Regional Parks, American River stakeholders and jurisdictional agencies in advance of its use by the USACE as a mitigation site. The Conceptual Naturalization Plan must also take into consideration the previous planning for this site that included extensive public participation and permitting, and the land designations for the site included in the Sacramento County American River Parkway Plan (2008) adopted by state statute.

Thank you for considering these comments.

Sincerely,

Dan Meier
14danmeier@gmail.com

From: M C
To: ARCF SEIS
Subject: [Non-DoD Source] Detailed Site Plans
Date: Thursday, December 1, 2022 11:59:01 AM

Hello. At the meeting yesterday regarding the American River Common Features (ARCF) Supplemental EIS/Subsequent EIR, I inquired if detailed drawings/plans were available online to examine, and was told not yet, more or less. I further asked in the chat box when those materials would be made available online for public examination, in light of the comment deadline in 31 days, and did not get a response. I'm not sure my question was seen. If you could let me know when I can see those plans online, I'd appreciate it.

Thanks for your hard work.
Matt Carr

From:	Dale Steele
To:	ARCF SEIS
Subject:	[Non-DoD Source] Preliminary Input for SEIS/SEIR Public Scoping Mtg 11/3/22
Date:	Wednesday, November 2, 2022 6:08:13 PM

I agree with the comments made by others at this meeting regarding mitigation in the Parkway. I was only able to get in at the end of the presentation. I had audio problems and tried to submit this input via chat. I am sending it in this email as well. I will likely have additional comments after the ACOE holds another public scoping meeting hopefully later this month. Additional comment time needs to be added as well since the process has been delayed due to technical problems.

My preliminary comments follow. There has been damage in recent years to existing ACOE mitigation sites within the Parkway. The ACOE needs to address these mitigation site impacts including how future sites will be preserved. Existing VELB status in the Parkway needs to be addressed in any proposals for additional mitigation for the species there. The Urretia parcel being considered for mitigation has existing wildlife habitat values that need to be considered and preserved and/or enhanced.

Thanks,

Dale Steele
dalet.steele@gmail.com

Thanks, Dale

"Pay attention to the open skies"

Appendix D. Summary of Comments Received during the National Environmental Policy Act Scoping Period

Comment Number	Name of Commenter	Commenting Organization	Comment	Response
Comments Accepted During the Virtual Scoping Meetings in November 2022				
1-1	Dan Airola	Central Valley Bird Club	Meeting is not legitimate due to incorrect link in announcement.	USACE agreed to host a second Scoping Meeting.
2-1	Joe O'Connor	none	Commented on bad link for meeting and asked for presentation to be repeated.	USACE agreed to post the presentation and a recording of the meeting
3-1	Betsy Weiland	Save the American River Association	Posting presentation is not a substitute for a second meeting.	USACE agreed to host a second Scoping Meeting during the first meeting. The follow up meeting was held on Nov 30th.
3-2	Betsy Weiland	Save the American River Association	If Urrutia property is to be used for mitigation, USACE must consider alternative designs and consider the ideas advanced through the Parkway Plan visioning process.	USACE appreciates the comment and will consider multiple alternatives in evaluation of the Urrutia property for mitigation.
3-3	Betsy Weiland	Save the American River Association	Mitigation should stay in the Parkway. Not many available sites, concerns about degrading already high-quality habitat, and questions about spreading elderberry.	"Per the 2015 and 2021 USFWS BO, USACE is required to 1) create mitigation as close to the project impacts as possible 2) find areas within the lower American River Parkway which will either expand existing compensation areas or provide for connectivity between conserved VELB habitat areas. 3) consider recovery actions outlined in VELB recovery plans. The 5 Elderberry Transplant sites that were covered in previous environmental documents were selected by a multi-agency committee in 2019. This committee included project partners and Sacramento County Department of Regional Parks."
3-4	Betsy Weiland	Save the American River Association	How will the Bank Protection Working Group remain engaged in designs for the American River?	Thank you for your comment. The American River Common Features (ARCF) General Reevaluation Report (GRR), authorized by Congress in the Water Resources Development Act (WRDA) of 2016, included up to 11 miles of bank stabilization being implemented along LAR to help safely convey flows up to 160,000 cubic feet per second (cfs). A commitment was included in the GRR, and further reinforced through an associated Biological Opinion, to work with local entities in implementation of bank protection. This commitment is being fulfilled through regular interactions with the Lower American River Task Force's Bank Protection Working Group (BPWG), a group originally organized in the mid-1990's. USACE will continue to provide updates and seek input from the BPWG on draft designs as they advance and evolve through the design process carried out by USACE and its state and local flood control partners.
3-5	Betsy Weiland	Save the American River Association	The project that intercepts with Cap City Freeway is still waiting for response to comments, correct?	LAR Contract 3A comment period has passed. USACE reported that the CEQA portion was certified on October 28, 2022 and is on CEQANET-NEPA was completed when the FONSI was signed on November 4, 2022 and is available at www.sacleveeupgrades.com. In addition, responses to written comments are included in the final documents.
3-6	Betsy Weiland	Save the American River Association	When will construction begin for that project? (LAR C3A)	Vegetation clearing is planned for December 2023 - Feb 15th, 2024, with construction occuring June 1, 2024 to November 30, 2024. However, there is a possibility that LAR C3A will be delayed, and the vegetation removal would then be pushed to December 2024 – Feb 15th 2025, and construciton would be June 1 2025 to November 30, 2025.
3-7	Betsy Weiland	Save the American River Association	Referring to slide #20, Why does mitigation have to be located on the American River Pkwy? Why can't it use mitigation banks? We have used mitigation banks for elderberry in the past?	Mitigating impacts on the lower American River is a requirement of the Wild and Scenic Rivers Act as well as the USFWS Biological Opinion and VELB Recovery Plans.
3-8	Betsy Weiland	Save the American River Association	The concern is that with the extensive amount of work on the American River and since mitigation is specific to what's being impacted, that mitigation is being in locations that are not appropriate. The Parkway is getting shoved into mitigation just to find mitigation sites. Also, what is stickability? Used on slide #21.	USACE and its partners are carefully evaluating sites along the American River Parkway for mitigation purposes and USACE will continue to work with local agencies and organizations to determine the most appropriate mitigation sites. The goal of mitigation is to compensate for the loss of habitat resulting from erosion protection, and USACE is having to mitigate at higher ratios than what is impacted from the project. Stackability is the term we have been using to define complex habitat that provides for multiple species, similar to the habitat we are impacting. For example, Riparian vegetation such as willows, that are planted below the OHWM could benefit both Western Yellow-billed Cuckoo and Salmonids. The associated vegetation around the elderberry mitigation sites also benefit the Riparian Habitat protected by the Fish and Wildlife Coordination Act.
4-1	Kathy Kaynor	Save the American River Association	Thank you for agreeing to re-do this meeting again. It is very important to a lot of us on here now, if you could give us any information on the Urrutia property.	Thank you for commenting. USACE agreed to an additional public meeting that would describe mitigation in more detail including Urrutia. Public scoping meetings were held virtually in Sacramento County on November 2, and 30, 2022. Information including the presentations are available at wwww.sacleveeupgrades.com.
5-1	Dan Airola	Central Valley Bird Club	Disagrees with the requirement for written comments to also be submitted. Putting the burden on the public to write and submit comments, discourages public comment.	USACE understands the difficulties with writing comments on public projects. However, USACE and its partners are in compliance with environmental laws and regulations and submitting comments in writing helps ensure accurate records of comments being received.
5-2	Dan Airola	Central Valley Bird Club	Urrutia property is really important for some types of waterfowl on the lower American River. More data needs to be collected on how the property is used by wildlife. USACE should conduct surveys of bird use on this off-channel site during winter this year. The site is important for species that feed on the river during the day and return to a quiet space at night.	Thank you for commenting. USACE will conduct all required surveys of the property prior to any disturbance.
6-1	Jim Morgan	None	Was the intent of the SEIS/SEIR to deal with the Urrutia property?	The intent of the SEIS/SEIR was not just for the Urrutia property/mitigation, but for many Design Refinements associated with the ARCF project, along with additional contracts, such as the Lower American River Contract 3B, or the Lower American River Contract 4A, the Sacramento River Contract 3, and Magpie Creek.
7-1	Joe O'Connor	None	It would be helpful if you had somebody come up with a concept for the use of the Urrutia property. It would help understand what is going to happen to it and how much would be used.	USACE and project partners are actively working on mitigation design concepts and as these concepts advance and site constraints are fully evaluated and surveys completed, information will be shared with the TRAC, BPWG, LARTF as other ARCF project designs as done. .

Comment Number	Name of Commenter	Commenting Organization	Comment	Response
8-1	Stephen Puccini	none	Who will be responsible for making sure the proposed mitigation succeeds? For example, Paradise Beach still has wire wrapping around trees that should've been removed.	Habitat Management Plans are being drafted for both the short term and long-term care of mitigation sites located on bank protection sites and elsewhere in the parkway. Maintenance of Browse Control (wire wrapping around trees to prevent beaver destruction) measures are addressed in the current drafts.
8-2	Stephen Puccini	none	Would like the SEIS/SEIR to state the responsible party for monitoring/maintenance of mitigation sites.	The responsible parties for short- and long-term care of the mitigation sites will be located in the site-specific Habitat Management Plans and the MMRP while would be included on the CEQA side of the SEIS/SEIR. The Habitat Management Plans are being drafted and reviewed by Resource Agencies currently but will require design as-builts to be finalized.
8-3	Stephen Puccini	none	Areas with launchable rock will have vegetation on the bench that will be lost if a large flood event occurs. Is there a plan to replace that vegetation if it's removed during a catastrophic event? Also, launchable rock would affect open water habitat?	Approximately 4 acres of additional mitigation is planned to account for the potential habitat impacted that expected to be lost to erosion over the life of the project. Each site-specific Habitat Management Plan will include adaptive management guidance; however in the case of catastrophic flood USACE expects the bank protection features to perform as flood control features, and without these features, habitat lost would most likely be greater than without these erosion protection features in place.
9-1	Chris Conard	none	If there is going to be a major reconfiguration of the Urrutia property, would it be part of another round of scoping? Or would we just see it in the SEIS/SEIR?	USACE would like to include mitigation strategy in this SEIS/EIR unless scheduling and other details make it impossible.
9-2	Chris Conard	none	There is no way to comment on that element of the project with no details available. By the time a public EIR is released, it's difficult to make meaningful changes to the project. The whole point of public scoping is to get up-front comments, and a lot of us are primarily interested in Urrutia, which is currently off the table. We don't want to have the next time we see it be fait accompli in the EIS/EIR.	It is not accurate to state that it is too late to make meaningful comments by the public review period. The NEPA and CEQA process both allow for document updates and re-releases to the public prior to the final publication of the document, allowing for public input and possibility of project changes because of that public input. Yes, the purpose of scoping is to inform the public on a project early in the process; however, it is also to gain information from the same public on resources and issues beyond the project description that might be of import to the overall action. The NEPA/CEQA public review period for the draft document is a relevant and appropriate time to issue comments and concerns for any aspect of the project that might lead to agency review of the project and even potential changes at that time. As requested by the public, a second scoping meeting was held on Nov 30, 2022. This presentation included additional information on potential mitigation sites, including Urrutia. Concerns and comments from the public regarding Urrutia have been received as part of the scoping process and are being responded to. However, this site is still in the conceptual phase of development meaning that specific design elements are not available at this time.
10-1	Anonymous -1	none	Is the CEQA lead the CVFPB planning to do an NOP for the CEQA side?	CVFPB will not prepare a separate Notice of Preparation (NOP). CEQA guidelines do not require an NOP for subsequent or supplemental EIRs.
11-1	Anonymous -2	none	Are detailed design plans available online yet?	Design plans very between contracts but the majority of the contracts are at 65% design or greater along with conceptual designs and would be available for the public review of the draft report.
12-1	Anthony Navasero	none	Looking at the slide for Sacramento River Erosion Contract 3 compared to another document on USACE website for SLER Contract 3.	The document online refers to a different project, addressing different issues.
12-2	Anthony Navasero	none	Are these separate areas?	Thank you for your comment. Sacramento River Erosion Contract 3 and SREL Contract 3 are different contracts that slightly overlap. For example, SREL work is top of levee, and Erosion work in lower down on the levee including in water work. For more information on SREL Contract 3 or Sacramento River Erosion Contract 3, please visit www.sacleveeupgrades.com.
12-3	Anthony Navasero	none	Still in the Delta though?	Sacramento River Erosion and SREL Contract 3 are located along the Sacramento River near the Pocket area and near Freeport. According to the Delta Council delineations, these areas are mostly located in the Delta Secondary Zone, with a small portion of them on the downstream side being in the Delta Primary Zone.
13-1	Robin Truitt	EPA Environmental Review Branch	EPA has previously commented on launchable toes/launchable rock features and the need to provide mitigation at these sites. Will the Draft Biological Assessments address any commitments with resources agencies/USFW and NMFS?	The on-site mitigation guidance for launchable rock trench and launchable toe features is included in both BOs. USACE will revisit in the new BAs. USACE does not expect either agency to change their opinion substantially in how they calculate on-site mitigation. USACE has prepared a launchable rock memo, provided to the Technical Resource Advisory Committee and resource agencies. The memo recommends about 4 acres of mitigation over the life of the project, based on an estimate of total erosion on launchable rock features over the life of the project.
13-2	Robin Truitt	EPA Environmental Review Branch	Will the memo be summarized in the BA?	Yes. Preparing the memo was a requirement of the BO. At this point, USACE has agreed to add acres of mitigation for launchable rock and this information will be included in the new BO
Comments Received by Email and/or U.S. Mail				
14-1	Anna Starkey	United Auburn Indian Community (UAIC)	Provide shapefiles for areas to be covered by the SEIS.	Shapefiles will be provided as requested.
14-2	Anna Starkey	UAIC	Matthew Moore is new THPO.	The Tribal contact list has been updated.

Comment Number	Name of Commenter	Commenting Organization	Comment	Response
15-1	Robin Truitt	U.S. EPA Environmental Review Branch	The EPA recommends that the Corps explore and objectively consider a full range of alternatives and evaluate in detail all reasonable alternatives that fulfill the project's purpose and need and regulatory requirements. It would be useful to present various bank erosion and levee protection methods together to compare those analyzed in the 2016 ARCF FEIS/FEIR (e.g., conventional riprap or rock and bank revetments1) with the proposed use of launchable toe protection and tie backs, and/or with bio-technical techniques that integrate riparian restoration for riverbank stabilization. Such comparisons would more sharply define the issues and provide a clear basis for choice among options by decision-makers (40 CFR 1502.14 (b)). Describe how each alternative was developed, how it addresses project objectives, and how it will be implemented. Quantify the potential environmental impacts of each alternative to the greatest extent (e.g., acres of habitat impacted, and mitigation needed) and clearly delineate differences in impacts between alternatives analyzed. We also recommend comparing the costs and benefits of each of the alternatives, including the costs for required mitigation measures. Further, discuss reasons for eliminating alternatives to the proposed action (40 CFR 1502.14 (a)).	Thank you for your comment. USACE follows federal law, CEQ regulations and guidelines, agency policy, and best practices for the development of a NEPA document. Additionally, the full range of alternatives and the associated impacts were discussed in the 2016 GRR EIS/EIR.
15-2	Robin Truitt	EPA Environmental Review Branch	In the Supplemental Draft EIS, include and describe all connected actions (40 CFR 1501.9(e)(1)). The Council on Environmental Quality Regulations also require analysis of "reasonably foreseeable environmental trends and planned actions in the area." Analysis of impacts should also consider "effects that are later in time or farther removed in distance from the proposed action or alternatives." EPA recommends describing the threat to resources as a whole, presented from the perspective of the resource instead of from the individual project. Identify how resources, ecosystems, and communities in the vicinity of the project have already been, or will be, affected by past, present, or future activities in the lower portions of the Sacramento and American River watersheds. The Supplemental Draft EIS should also consider the combined impacts associated with these activities the area and the potential impacts on various resources, characterized in terms of their response to change and capacity to withstand multiple stressors. Describe a suite of potential mitigation measures, under the jurisdiction of the Corps and project sponsors, that will serve to alert other agencies or officials about potential protective measures that can be implemented. For this Supplemental DEIS, we specifically recommend that the Corps focus its analysis on riparian habitat, biological and aquatic resources, and threatened or endangered species that are at risk or be significantly impacted by the proposed project before mitigation.	Thank you for your comment. USACE will follow Federal law, CEQ regulations, and agency policy on complying with NEPA, including assessing all appropriate areas of impact and resources impacted by the Federal Action, whether through direct, indirect, beneficial, and/or cumulative effects. Associated mitigation measures, best management practices, and avoidance and minimization measures to be implemented to reduce impacts to those resources will be noted within the joint NEPA and CEQA document, including a cumulative impact analysis.
15-3	Robin Truitt	EPA Environmental Review Branch	When evaluating project effects, we recommend using existing environmental conditions as the baseline for comparing impacts across all alternatives, including the no action alternative. This provides an important frame of reference for quantifying and/or characterizing magnitudes of effects and understanding each alternative's impacts and potential benefits. This is particularly important when there are environmental protections in place that are based on current conditions, such as total maximum daily loads (TMDLs), for impaired stream segments. We recommend that the Corps consider the following when defining baseline conditions: 1.) Verify that historical data (e.g., data five years or older) are representative of current conditions. 2.) Compare historical data with the most recent water quality and quantity information and any predictive models that show what might occur under various conditions or trends. 3.) Include resources directly impacted by the project footprints within the geographic scope of analysis, as well as the resources indirectly (or secondarily) impacted by the projects (40 CFR 1508.1(g)(1)).	Thank you for your comment. USACE follows federal law, CEQ regulations and guidelines, agency policy, and best practices for the development of a NEPA document, and will use existing baseline environmental conditions when evaluating the new design refinements. .USACE will lay out any methodology and assumptions used in development of the analysis in the SEIS/SEIR.

Comment Number	Name of Commenter	Commenting Organization	Comment	Response
15-4	Robin Truitt	EPA Environmental Review Branch	We recommend that the Supplemental Draft EIS consider how climate change could potentially influence the study area. Include anticipated changes to the watershed in terms of quantity and timing of snowpack, runoff, and precipitation and how these changes may impact hydrology and riparian habitats in the project area, project operations and maintenance, and long-term mitigation success. Discuss how implementation of the proposed projects could lessen or potentially mitigate for these impacts.	Analyzing designs to address flows above 160,000 cfs are outside of the scope and authorization for this project. The GRR authorization specifically references a 160,000 cfs channel design flow target based on the 1 in 200 annual exceedance probability (AEP) (200-year event) in the hydraulic analyses prepared during the study phases of the project. In addition to the modeling, the American River design flow targets were also based on an understanding of an 82-year period of historic hydrologic records, with an emphasis of the system's performance seen in the 1986 and 1997 floods with an emphasis on erosion as the potential failure mode. Prior to the construction of the auxiliary spillway (Joint Federal Project (JFP)), the maximum discharge that could safely occur from the Folsom Dam outlets and over the dam's main spillway was 115,000 cfs. This was the approximate flow estimated to have been released at the peak of the 1986 event. JFP added an additional 312,000 cfs of potential flood release capacity. Nimbus Dam regulates flows before being released in the Lower American River and can buffer some portion of higher releases when JFP is used to control flood flows. The design team briefly examined the flow behavior during higher releases that could occur with the operation of JFP, including a 190,000 cfs release. Major infrastructure improvements, including modifications to multiple bridge decks downstream, would be required in order to safely accommodate a 190,000 cfs flow. Increasing temperatures under climate change mean that the hydrologic record will begin to shift and there will need to be increasing considerations of flashier and potentially larger flood events. Above 190,000 cfs, further channel and floodplain capacity and levee modifications would be required to facilitate passing the probable maximum flood (PMF) and overtopping of the levee system could become a concern at the PMF. The PMF inflow for Folsom Lake for the approximately 1,900 square mile drainage basin is estimated at approximately 900,000 cfs (1 in 25,000 AEP). The Bureau of Reclamation is in the process of studying the American River Basin, part of which is identifying measures to be implemented upstream of Folsom Lake to flows that would have historically been stored as snowpack before they are released into the valley. The Corps has both ecosystem restoration and flood risk management authorities it can exercise once authorized by Congress and would be able to assist in addressing larger watershed concerns with engineering with nature approaches or on-stream or off-stream storage to mitigate climate change flows, however, no recent studies or initiatives exist currently in our district and this project's authority does not cover those activities. The Corps has offered input into the Central Valley Flood Protection Plan that partnerships may be available to implement engineering with nature solutions, like wet meadow restoration, in headwater areas of the state, to mitigate climate change influenced flow conditions. Regarding natural community resiliency in the Parkway, particularly project mitigation sites, planting plans require irrigation for the first several years of riparian establishment with species that are selected for their elevational proximity to the low-flow channel of the river to effectively establish roots down to the water table. Remediation may be needed to address losses in excess of the criteria set forth in our biological opinions within the first 8 to 10 years. Some minor amount of riparian community succession is expected over the 50-year lifespan of the project, but tree vigor and survivorship may be negatively influenced by increasing temperatures if the water table is also affected. Invasive weed management will be allowed and is encouraged during the long-term management of the site to reduce competition for native trees and shrubs. The Corps and non-federal sponsors are required to manage these areasy and adaptive management considerations can be developed and applied as needed to address any issues with long-term success. Although the ARCF project is anticipated to result in net benefits to climate change, USACE is not directly addressing climate change conditions with this SEIS/SEIR as future flows from the Folsom JFP are greater than what the current channel can handle based on historic hydrologic conditions. The ARCF SEIS/SEIR addresses design refinements identified in the 2016 ARCF GRR EIS/EIR that will ultimately help armor the waterside toes of the levee allowing for higher flows and velocities from the JFP in the future.
15-5	Robin Truitt	EPA Environmental Review Branch	We recommend that the Corps incorporate by reference and summarize the 2016 ARCF FEIS/FEIR analysis of water quality, including collection of dissolved oxygen, temperature, and other parameters that are considered seasonal or naturally occurring. These data may be used for comparison to changes in water quality as a result of current conditions or project actions.	The SEIS will incorporate by reference the 2016 ARCF FEIS/FEIR and only include additional analysis where needed. In addition, each contract under the ARCF project is required to obtain a CWA 401 Water Quality Certification that includes specific water quality monitoring upstream and downstream during construction. In addition, each contractor is required to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to ensure storm water does not leave the site carrying sediments and or any construction related chemicals.
15-6	Robin Truitt	EPA Environmental Review Branch	Discuss all direct, indirect, and cumulative impacts to surface water and groundwater quality and quantity from the proposed project and alternatives both during construction and in operations. Describe all potential project discharges, seepage, temporary ponding, diversions, as well as the potential effects of these activities on water quality and flow and other beneficial uses. Focus on potentially significant threats to surface waters from existing conditions and proposed management actions, including the suspension and transport of sediments or substrates. Discuss the potential for increased (or decreased) runoff of sediments and pollutants, impacts to riparian areas downstream, the potential for erosion, the potential impact to drinking water intakes, and changes in stream flow, substrate, dissolved oxygen, and temperature. Identify and evaluate measures which could reduce these impacts for each design or engineering alternative and commit to these measures as part of the project.	The SEIS/SEIR will evaluate impacts to surface and ground water as compared to current conditions as a result of the project construction and post-construction conditions. The potential impacts mentioned in your comment will be considered for each contract and potential mitigation site, as well as identification of measures to avoid or reduce those impacts.

Comment Number	Name of Commenter	Commenting Organization	Comment	Response
15-7	Robin Truitt	EPA Environmental Review Branch	In the Supplemental Draft EIS, describe aquatic habitats in the project area (e.g., habitat type, plant and animal species, functional values, and integrity) and the environmental consequences of the proposed alternatives on these resources. Impacts to aquatic resources should be evaluated in terms of the areal (acreage for wetlands) or linear extent (for streams) to be impacted and by the functions they perform. To support a LEDPA determination, conduct a formal and reproducible assessment of the condition of aquatic resources in the reservoir footprint using an approved conditional assessment such as the California Rapid Assessment Method (CRAM).2	All jurisdictional aquatic habitats under Section 404 of CWA will be assessed and evaluated. Pending on the level of impact a Section 404 b1 alternative analysis may be conducted. Evaluating selected alternatives under the 404 b1 will be conducted to demonstrate Least Environmental Damaging Practicable Alternative (LEDPA). If the selective alternative is not the preferred LEDPA alternative additional compensatory mitigation may be required.
15-8	Robin Truitt	EPA Environmental Review Branch	Regarding the BA addressing planting benches atop launchable flood features potentially reducing riparian vegetation and native habitat function, reduce fish habitat, and food availability throughout the area. The EPA recommends that the Supplemental EIS incorporate the findings of the Biological Assessment (to be released in December 2022) and consultations into its analysis and discuss which proposed design features or alternatives will be counted, or discounted, as long-term compensatory mitigation. Specifically discuss how the 4 acres of additional compensatory mitigation associated with the launchable features in LAR Contract 2 were calculated or could be replicated as applied to the launchable rock toes or trenches proposed here.	Onsite mitigation is any onsite planting area, excluding native grasslands. Each site will have a Habitat Management Plan. The Launchable Rock Durability Analysis memorandum provides results of the engineering analysis to determine the long-term durability of the Sacramento and American River ARCF 2016 Project sites. Erosion repairs with launchable rock and on-site habitat mitigation features currently in place have performed well and have largely remained stable since they were constructed. They are expected to continue to remain mostly stable for the life of the project. The engineering review of previously constructed sites found that some rock launching has occurred in response to scour and erosion. In most cases, however, there has been no effect, or minor effects, on the associated habitat mitigation bench. Nevertheless, some sites have an anticipated future durability rating of medium. We anticipate a total of 4.12 acres of the on-site habitat mitigation area could be lost at the ARCF 2016 Project sites. The Memo supports a total of 4.12 acres of on-site habitat mitigation should be credited at a 1:1 impact to restoration ratio for the onsite mitigation proposed. The full memorandum will be provided in the appendix.
15-9	Robin Truitt	EPA Environmental Review Branch	Propose a Mitigation Plan that identifies and quantifies which species and/or aquatic resources might be directly, indirectly, or cumulatively affected by each alternative and mitigate impacts to these habitats. Emphasis should be placed on the protection and recovery of species due to their status or potential status under the federal or state Endangered Species Act, and compensation for impacted aquatic resource functions and values. It should discuss the types of mitigation needed and types/sites of compensatory mitigation available. The Mitigation Plan should also identify responsible parties, and funding mechanisms to be used. It would evaluate (and quantify if feasible) potential mitigation measures and their effectiveness at mitigating impacts to loss of habitat. Discuss any limitations or drawbacks of these mitigation measures, and address how their effectiveness will be implemented, monitored, and enforced. Include a Long-Term Management Plan that adapts mitigation measures to future hydrologic and geomorphic conditions within the system of approved projects in the 2016 American River Common Features Final EIS/EIR and update the Habitat Mitigation Monitoring and Adaptive Management Plan in coordination with NMFS and USFWS. Discuss remedial actions to be taken if on-site mitigation is compromised in the future. Remedial actions may include replanting, creation of additional off-site habitat, or purchase of mitigation bank credits. Include adaptive management responses, such as mitigation ratios, success criteria, monitoring, and maintenance, to future potential impacts of launchable rock events on riparian and fish habitat.	Much of this information can be found in the supplemental environmental documents that have previously been finalized and the current Biological Opinions. Additional information will be in the SEIS/EIR, Biological Assessments, upcoming Biological Opinions, and the site-specific Habitat Management Plans. Responsible parties, performance criteria, success criteria, adaptive management, monitoring and reporting are outlined in site specific Habitat Management Plans. These documents are coordinated with Resource Agencies and Sacramento County Department of Regional Parks.
15-10	Robin Truitt	EPA Environmental Review Branch	The proposed project will impact a variety of resources for an extended period of time. As a result, we recommend that the project be designed to include an environmental inspection and monitoring program to ensure compliance with all mitigation measures and assess their effectiveness. In the Supplemental Draft EIS, describe the monitoring program and how it will be used as an effective feedback mechanism (i.e., adaptive management) so that any needed adjustments can be made to the project to meet environmental objectives throughout the life of the project. Discuss adaptive management monitoring programs that will be implemented before and after the proposed actions to determine potential impacts on plant and wildlife species, especially species classified rare, threatened, or endangered on either state or federal lists. Describe a mechanism or process that could be used to consider and implement additional mitigation measures.	Thank you for your comment. USACE follows federal law, CEQ regulations and guidelines, agency policy, and best practices for the development of a NEPA document. In addition, an HMMAMP and LTMPs will be developed to address long-term maintenance. Although NEPA doesn't' require it, a Mitigation Monitoring and Reporting Plan will be developed and included in the SEIR portion of the document.
15-11	Robin Truitt	EPA Environmental Review Branch	Include as appendices to the Supplemental Draft EIS the most recent biological assessment (informal consultation). Summarize the biological opinions of the resource agencies (formal consultation) and demonstrate that the preferred alternative is consistent with these assessments or opinions. Discuss the project's consistency with other existing laws and regulations, including the Migratory Bird Treaty Act.	Thank you for your comment. We will include the biological assessments, biological opinions, and references to other applicable laws and regulations.
15-12	Robin Truitt	EPA Environmental Review Branch	We recommend providing clear commitments to carry out proposed mitigation measures identified in the Supplemental Draft EIS, or as otherwise established. Joe Morgan of EPA's Wetlands and Oceans Section is available to provide expertise and assistance on the development of Mitigation or Long-Term Management Plans. He can be reached at 415.972.3309 or by email Morgan.Joseph@epa.gov	Habitat Management Plans are being drafted for each site. In addition, an MMRP will be developed as required by CEQA. Thank you for the additional resource.

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15-13	Robin Truitt	EPA Environmental Review Branch	In Supplemental Draft EIS, include measures that are consistent with Executive Order 13112 on Invasive Species. We suggest including any existing agency direction for noxious weed management, a description of current conditions, and best management practices, which will be utilized to prevent, detect, and control invasives in the project area. Discuss measures that would be implemented to reduce the likelihood of introduction and spread of invasive species within the proposed project area. We encourage the Corps and local sponsors to promote integrated weed management, with prioritization of management techniques that focus on non-chemical treatments first, and mitigation to avoid herbicide transport to surface or ground waters. Early recognition and control of new infestations is critical to stop the spread of the infestation and avoid wider future use of herbicides, which could correspondingly have more adverse impacts on biodiversity, water quality and fisheries.	The 2016 ARCF GRR Final EIS/EIR describes the project's compliance with Executive Order 13112 and identifies areas dominated by non-native vegetation in the project area in Section 3.6, "Vegetation and Wildlife,". The Project would follow updated USACE Invasive Species Policy Guidance in fulfillment of Section 501 of WRDA 2020. This replaces the USACE Invasive Species Policy dated June 12, 2009. The Corps would remove the noxious weeds from the various plant communities prior to construction. For each of the action alternatives, direct effects to stands of grassland habitat with invasive plants would result from clearing and grubbing and rock placement activities once levee improvements and construction begin. Disturbed areas will be reseeded with a native grass mix. Following project completion, a management plan will be implemented that will be consistent with the Habitat Mitigation, Monitoring, and Adaptive Management Plan developed for the 2016 ARCF GRR Final EIS/EIR. Invasive plant species incursions will be controlled as early as possible to prevent wide- scale establishment and minimize control efforts such as pesticide usage. The techniques available for controlling terrestrial and aquatic species may involve hand or mechanical removal and chemical treatment. Only chemicals approved for use in California in or around aquatic habitats may be used. Crews will weed within the watering basins of the plantings and within an 18-inch radius of each woody and grass associated plant. Invasive species mitigation will prevent nonnative herbaceous growth and soil moisture competition. Maintenance crews will mow weeds to below 6 inches in height during the growing season.
15-14	Robin Truitt	EPA Environmental Review Branch	USACE is directed to initiate outreach and engage disadvantaged communities early in the process to identify and address problems. In addition, Executive Order 12898, "*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*" (February 16, 1994), directs federal agencies to identify and address, as appropriate, disproportionately high, and adverse human health or environmental effects of their actions on minority and low-income populations. It further directs agencies to develop a strategy for implementing environmental justice and providing minority and low-income communities access to public information and public participation. As such, the Corps should address adverse environmental effects of the proposed project on these communities and outline measures to mitigate for impacts.	USACE and other federal agencies are required to take Environmental Justice (EJ) concerns into consideration pursuant to NEPA and Executive Orders 12898, 13985, 14008 and the Justice40 initiative. To comply with federal EJ initiatives, USACE must first identify communities that have been marginalized, underserved, and overburdened by environmental hazards. Defined as "disadvantaged communities" in the Justice40 Initiative and the CEQ EJ Tool, this data will be used to identify EJ concerns in the project area. In accordance with guidelines presented in federal and agency guidance and in "Promising Practices for EJ Methodologies in NEPA Reviews: Report of the Federal Interagency Working Group on Environmental Justice & NEPA Committee" (EPA 2016), USACE is identifying and assessing potential impacts to disadvantaged communities through demographic analysis, assessment of impacts and public outreach and will be included in the EJ chapter of the SEIS/SEIR. Outreach efforts have consisted of a plain language letter being sent to school districts, faith-based groups, and advocacy groups for unhoused individuals in the vicinity of the project area. As project details are solidified it is anticipated that outreach to underrepresented communities and community centers would continue.
15-15	Robin Truitt	EPA Environmental Review Branch	In the Corps' preparation of the environmental justice analysis, we encourage consideration of two specific resources: 1) CEQ's Environmental Justice: Guidance Under the National Environmental Policy Act report5 and 2) the Federal Interagency Working Group on Environmental Justice and NEPA Committee's Promising Practices for Environmental Justice Methodologies in NEPA Reviews report.6 These documents provide information on applying environmental justice methodologies that have been established in federal NEPA practice. Further, it may be useful to use EPA's EJ Screen7 and/or the most recent American Community Survey from the U.S. Census Bureau (i.e., Five-Year Date Profile Estimates for 2013-2019). To best illustrate the presence of a minority population, we recommend that the Corps analyze block groups, the smallest geographical unit for which the U.S. Census Bureau publishes data. We caution using larger tracts in the analysis, such as counties, to the extent they may dilute the presence of low income or minority populations. In the Upper Guadalupe Project report, the Corps used the City of San José's Homeless Census figures to illustrate the rising numbers of unsheltered persons, the nature of the problem, and committed to engaging and supporting the city in its efforts to relocate unhoused communities to places outside of the flood hazard zone and improve life safety. Discuss these matters in the Supplemental Draft EIS and to support any finding of 'no disproportionate impact," estimate the number of individuals who could be impacted by construction activities and describe what would happen to the unhoused after removal. After the Corps has determined if minority and low-income populations reside in the project area, we recommend that the Draft EA or EIS discuss whether these communities would be potentially affected by individual or cumulative actions of the proposed action. We also recommend addressing whether any of the alternatives or construction access limits would cause any disproportionate adverse impacts, such as higher exposure to toxins; changes in existing ecological, cultural, economic, or social resources or access; cumulative or multiple adverse exposures from environmental hazards; or community disruption.	The Corps has determined that individuals experiencing homelessness, communities of color and low-income populations reside in the project area. Guided by federal and agency policy along with virtual EJ tools (E.g., EPA EJ Screen, CEQ Screening Tool etc.) the Corps continues to work with local organizations to facilitate outreach and to identify and mitigate impacts to these communities. At this time, feedback from area schools and faith-based organizations has contributed to EJ mitigation measures.
15-16	Robin Truitt	EPA Environmental Review Branch	Present opportunities for affected communities to provide input into the NEPA process. In the Draft EA or EIS, include information describing what was done to inform these communities about the project and the potential impacts it will have on their communities (notices, mailings, fact sheets, briefings, presentations, translations, newsletters, reports, community interviews, surveys, canvassing, telephone hotlines, question and answer sessions, stakeholder meetings, and on-scene information), what input was received from the communities, and how that input was utilized in the decisions that were made regarding the project.	Many EJ communities were identified in the initial NEPA process. Public notices and two meetings were held to solicit input. Additional targeted outreach to identified EJ communities is ongoing via letters, emails, telephone calls and social media.

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15-17	Robin Truitt	EPA Environmental Review Branch	The EPA understands that land side staging areas and haul routes to the staging areas were not analyzed for specific projects in the 2016 ARCF GRR FEIS/FEIR. The Supplemental Draft EIS should explain why barge work cannot be employed to avoid or minimize impacts to traffic, transportation, and noise. The Supplemental Draft EIS should also detail essential provisions in a Construction Traffic Management Plan that address circulation considerations, such as maintaining a minimum of one lane open to traffic in each direction at all times, restricting truck traffic on residential streets to only those streets where project activities occur, notifying impacted areas and transit agencies of alternate traffic and pedestrian routes and bus stops at least 72 hours prior to the start of construction work, and maximizing the use of major roadways and trucking routes for any detours or road closures.	Using barges only, for waterside work, was considered in the original document. Since then, the need for landside staging areas, access roads, and work from the top of the levee was realized. These potential impacts will be covered in the coming SEIS/SEIR as this will expand the project Area of Effect (AOE). Certain projects will be forced to shut down roads completely due to design changes made since the 2016 document. These impacts will be addressed in detail in the SEIS/SEIR. Traffic impact reduction methods will be addressed as well.
15-18	Robin Truitt	EPA Environmental Review Branch	In the Supplemental Draft EIS, discuss the need for extended nighttime work schedules and explain how noise impacts are avoided or minimized by performing the work at night. Typically, noise ordinances limit construction activities to certain daylight hours to prevent night-time disruption to nearby residents or other sensitive receptors - and it would be useful to explain reasons for any night work preferences to the community. Estimate noise levels from both landside and water side work. Discuss compliance with and City and County noise ordinances and what approvals would be needed to deviate from timing restrictions. Determine at what levels, and where, temporary barriers for noise reduction would be needed.	Night time work is discouraged or not allowed in most of the ARCF project footprints. This is due to city and county ordinances restricting noise levels during the evening and nighttime hours. As most of the project are near residences, nighttime work could increase the number of sensitive receptors in the project's area of effect. In areas such as business parks or less densely populated areas where work is over 1000 feet from residences nighttime work may be considered to reduce noise impacts, as there are fewer sensitive receptors present during non-business hours. These areas are limited within the projects and may not be practical for only small portions of projects. As for the SEIS/SEIR, night work is a possibility for Magpie Creek, Urrutia, Grand Island and possibly LAR Contract 4A due to the construction being 1,000 feet away from residences. Noise impacts would be avoided, and measures would be implemented to ensure that sensitive receptors would not be impacted by noise in areas where night work needs to take place.
15-19	Robin Truitt	EPA Environmental Review Branch	The Supplemental Draft EIS should provide a discussion of ambient air conditions (baseline or existing), National Ambient Air Quality Standards and nonattainment areas, and potential air quality impacts of the proposed project for each alternative. In estimating criteria pollutant emissions for the analysis area, discuss the timeframe for release of these emissions through the license lifespan of the proposed project. We note that the project area is in moderate nonattainment for PM10; therefore, we recommend the following measures to mitigate construction emissions of fugitive dust, oxides of nitrogen, and volatile organic compounds and to include these measures in all construction contracts. Fugitive Dust Source Controls: 1) Stabilize disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both active and inactive sites during workdays, weekends, holidays, and windy conditions. 2) Phase grading operations where appropriate and operate water trucks for stabilization of surfaces under windy conditions. 3)When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph. Mobile & Stationary Controls: 1) Reduce unnecessary idling from heavy equipment. 2) Prohibit engine tampering to increase horsepower, unless within the manufacturer's specifications. 3) Lease or buy newer, cleaner equipment using the best available emissions control technologies. 4) Use lower-emitting engines and fuels, including electric, liquified gas, hydrogen fuel cells, and/or alternative diesel formulations, if feasible. 4) On-Highway Vehicles - On-highway vehicles should meet, or exceed, the U.S. EPA exhaust emissions standards for model year 2010 and newer heavy-duty on-highway compression- ignition engines (e.g., drayage trucks, long haul trucks, refuse haulers, shuttle buses, etc.). 5) Nonroad Vehicles & Equipment - Nonroad vehicles and equipment should meet, or exceed, the U.S. EPA Tier 4 exhaust emissions standards for heavy-duty nonroad compression-ignition engines (e.g., nonroad trucks, construction equipment, cargo handlers, etc.). Administrative Controls: 1) Coordinate with appropriate air quality agencies to identify a construction schedule that minimizes cumulative impacts from other planned projects in the region, to the extent feasible. 2) Prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. 3) Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow and avoid routing truck traffic near sensitive land uses to the fullest extent feasible. 4) Locate diesel engines, motors, and equipment staging areas as far as possible from residential areas and other sensitive receptors (e.g., schools, daycare centers, hospitals, senior centers, etc.). 5) Reduce construction-related trips of workers and equipment, including trucks. 6) Identify all commitments to reduce construction emissions and quantify air quality improvements that would result from adopting specific air quality measures. 7) Identify where implementation of mitigation measures is rejected based on economic infeasibility.	In addition to updating the General Conformity Report as appropriate, the SEIS will include a description of affected air basins, attainment status, conformity thresholds and an analysis of updated emissions based on changes to the duration of the construction period in consideration of all remaining contracts. The contractor specifications will require compliance with Air Resources Board Portable Equipment Registration regulations, offroad and on road equipment regulations, and local air district rules on fugitive dust controls. We will assess the remaining suggested environmental commitments for application to our remaining contracts. Seepage and stability work done on the Sacramento River required specialty equipment that could not meet the Tier 4 standard, so we will attempt to identify any exceptions or will adopt the Tier 4 commitment for the remainder of the project.

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15-20	Robin Truitt	EPA Environmental Review Branch	It is important that formal government-to-government consultation take place early in the scoping phase of the project to ensure that all issues are adequately addressed in the Draft EA or EIS. The principles for interactions with tribal governments are outlined in the presidential "Memorandum on Government- to Government Relations with Native American Tribal Governments" (April 29, 1994) and Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments" (November 6, 2000). As a resource, we recommend the document *Tribal Consultation: Best Practices in Historic Preservation,*[12] published by the National Association of Tribal Historic Preservation Officers. EPA Region 9 has a robust tribal program. If you need assistance with consultation or updated tribal contacts, please contact John (JR) Herbst at (619) 235-4787 or herbst@epa.gov; In the Draft EA or EIS, summarize the results of tribal consultation and identify the main concerns expressed by tribes (if any), and how those concerns were addressed. We also recommend identifying any protection, mitigation, and enhancement measures identified by tribes.	Since the majority of impacts to cultural resources were analyzed in the original EIS, this summary will only entail the changes in scope included in the SEIS. Several local tribes are engaged in ongoing consultation through the Section 106 NHPA process. USACE has accomplished this successfully at the staff level; they have not requested Government-to-Government consultation. Tribal concerns and preferences have been documented and integrated into the target Section 106 documents that USACE has produced according to the requirements of the Programmatic Agreement; this practice will continue for proposed project elements documented in this SEIS. Due to the volume of correspondence, not all of these communications will be included in the SEIS.
15-21	Robin Truitt	EPA Environmental Review Branch	In the Supplemental Draft EIS, discuss how the Corps would avoid or minimize adverse effects on the physical integrity, accessibility, or use of cultural resources or archaeological sites, including traditional cultural properties (TCPs), throughout the project area. Clearly discuss mitigation measures for archaeological sites and TCPs. We encourage the Corps to append any Memoranda of Agreements to the Supplemental Draft EIS, after redacting specific information about these sites that is sensitive and protected under Section 304 of NHPA. We also recommend providing a summary of all coordination with tribes and with the SHPO/THPOs, including identification of NRHP eligible sites and development of a Cultural Resource Management Plan. It is important to note that a sacred site may not meet NRHP criteria for a historic property and that, conversely, a historic property may not meet the criteria for a sacred site. It is also important to note that sacred sites may not be identified solely in consulting with tribes located within geographic proximity of the project. Tribes located outside the direct impact area the plan area may also have religiously significant ties to lands within the plan area and should be included in the consultation process. Address the existence of any Indian sacred sites in the project area that may be considered spiritual sites by regional tribal nations. Discuss how the Corps would ensure that the proposed action would avoid or mitigate for the impacts to the physical integrity, accessibility, or use of sacred sites.	Only cultural resources, TCPs, etc. not covered by the original EIS would be analyzed in the SEIS. The process for consultation, development of minimization measures, treatments, etc. is defined in a Programmatic Agreement (PA), executed in 2015. USACE will continue to adhere to the terms of the PA in order to fulfill the requirements of the NHPA.
16-1	Karen Huss	SMAQMD	Analysis should follow SMAQMD's CEQA guide.	We will utilize the Guide to Air Quality Assessment in Sacramento County in developing our air quality assessment for the SEIS in coordination with the state and local partners on the project.
16-2	Karen Huss	SMAQMD	SEIS/EIR should incorporate mitigation measures and environmental commitments from the GRR and the General Conformity Determination. Outdated, infeasible, or conflicting measures should be updated.	The SEIS/SEIR will incorporate by reference mitigation measures and environmental commitments from the 2016 GRR FEIS/FEIR and evaluate any new design refinements and incorporate any new mitigation if needed. If needed, the regulatory setting as it pertains to air quality will also be update for any new regulations.
16-3	Karen Huss	SMAQMD	The analysis should disclose whether project changes will impact the GCD and USACE should update the GCD if necessary.	It is anticipated that the General Conformity Report will need to be updated or amended to tease out whether there are changes to emissions based on the extended duration of the construction schedule from 8 years back to 14 years, and with the additional material being hauled. An updated report may not be available by the draft release of the SEIS, however, we can incorporate the existing Final General Conformity Report as an appendix in the draft SEIS and furnish and updated report for the Final SEIS.
16-4	Karen Huss	SMAQMD	Trucking and equipment staging may create conflicts with bikes/pedestrians and transit us. Alternative routes should be determined with input from surrounding communities and local agencies to ensure active mode commute trips are not discouraged by construction.	USACE appreciates the comment regarding staging areas interfering with recreational use of the American River Parkway. USACE coordinates all project staging area location decisions with the project partners including County Parks and the National Park Service (NPS) in order to obtain a Consistency Determination from NPS. This determination requires USACE to adequately divert bike traffic, and in most cases, keep the diverted bike traffic within the Parkway and on paved surfaces.
17-1	Liz Bellas	Sacramento County - Regional Parks Dept.	Public use of the Urrutia property is governed by the goals and policies of the 2008 American River Parkway Plan (Parkway Plan). The Area Plan for the Discovery Park area of the Parkway calls for acquiring the property and reclaiming and restoring it to enhance its fish and wildlife value, accommodate historical and cultural interpretive activities, including demonstrations of California Native American culture, and support picnicking, hiking, and wildlife viewing. The Area Plan further identifies improvements that should be created to support these purposes and, based on the assumption that the site's existing open water pond will remain post-acquisition, provides that boating and fishing may be allowed for interpretive purposes only by permit at the discretion of the Parkway Manager.	The Urrutia property is a privately held location within the American River Parkway that is currently not open to public use. The only reason this property will be acquired is to provide agency required mitigation for the American River Common Features Project. The mitigation will provide habitat for state and federally listed species as well as enhance the ecological value for local and migratory wildlife by restoring the disconnected floodplain. Local tribes are already involved with this portion of the ARCF project, and to the extent feasible any mitigation or cultural uses will be included in the final designs. The site may have limited recreational access for hiking and wildlife viewing while the construction is occurring and while the vegetation is being established however once mature the site could provide these public uses. The SEIS/SEIR makes the assumption that a pond will be retained but a pond is not required by the NEPA. The inclusion of a pond was evaluated as one of the design alternatives to satisfy CEQA requirements; however, was ultimately not carried forward by USACE due to being cost prohibitive and non-compatible with habitat mitigation requirements.

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17-2	Liz Bellas	Sacramento County, Regional Parks Dept.	This letter provides support for a habitat enhancement alternative at the Urrutia property that preserves a substantial portion of the isolated 30-acre pond on the site and believes it would be appropriate for USACE to consider this alternative to ensure alignment with the Parkway Plan Policies applicable to the Urrutia site. Such an alternative was developed by USACE as part of the Urrutia planning process at the end of 2021. The following comments are reasons for supporting this alternative. Under this alternative, the offsite floodplain habitat needs of the ARCF Project would be achieved and there would space remaining on the Urrutia property to provide a small portion of the VELB habitat needs with the balance being placed at other locations in the Parkway (including land adjacent to the Urrutia property) that Regional Parks has identified as suitable and available for this purpose. This alternative would accommodate an isolated pond approximately 30 acres in size thereby preserving most of the wildlife habitat, interpretive, and wildlife viewing values associated with this feature of the Parkway and aligning more closely with the Parkway Plan policies applicable to the Urrutia site. The existing fish stranding risk could be lessened through the shrinkage of the pond and there would be opportunities for further minimization of this risk through site grading so as to direct Bannon Slough overflows away from the remnant pond and allow some escapement from the pond into Bannon Slough. This alternative would not require substantial volumes of fill material to be brought to the site thereby eliminating many of the traffic, noise, and fugitive dust issues that would result from filling the entire pond. The isolated pond could serve as a discharge site for ponded water evacuated from the portion of the pond being filled with material to create floodplain habitat. This would allow the existing riverside berm to separate the construction area from the river and minimize the risk that sediment mobilized by construction activity could reach the American River and degrade its water quality. And retention of a substantial portion of the isolated pond would minimize the need to mitigate for the loss of the wildlife habitat values associated with this existing feature.	Thank you for your comment expressing the importance the preserving the Urrutia pond to protect wildlife habitat, interpretive and wildlife viewing values consistent with the American Parkway Plan. At the request of County Parks, an alternative that preserves a substantial portion of the 30-acre pond has been developed and was considered to satisfy Section 15126.6 of the State CEQA Guidelines, but not evaluated as a full alternative in the Draft SEIS/SEIR. The American River Mitigation (Urrutia) site, upon acquisition by the Project Partners, would be surveyed to fully evaluate the wildlife habitat available. The Urrutia pond is a manmade feature resulting from mining. Mitigation site development would aim to restore the landscape and natural floodplain to a pre-mining era when habitat values were highest for the species that are now Federally protected (threatened and endangered) due primarily to widespread habitat loss associated with urbanization. The 120-acre site would be constructed to provide habitat as outlined in the USFWS and NMFS Biological Opinions. The site would also mitigate for the loss of regional habitats defined in the ARCF 2016 FWCA Report. Inclusion of the pond is not compatible with the ARCF habitat mitigation requirements and would be potentially cost prohibitive. It would reduce the acres available for mitigation resulting in a need for another site or sites, which have been difficult to identify on the Lower American River. It would introduce risk of predation to special status species by non-native species. It would include a large non-project cost to build features to reduce the risk of species predation.
17-3	Liz Bellas	Sacramento County, Regional Parks Dept.	Regional Parks appreciates the importance of reducing stranding and predation of anadromous fish in the Parkway. Toward that end, the Parkway Plan declares that “minor grading and dredging should be conducted to provide positive drainage from floodplain ponds to the low flow channel of the American River” (Policy 3.12). In this instance, the need for off-site mitigation in connection with USACE’s ongoing bank stabilization program in the Parkway has created an opportunity to eliminate a long-standing fish stranding risk. However, the scale of the physical changes being contemplated for the Urrutia site go far beyond minor grading and dredging and therefore warrant a careful consideration of the resulting impacts to the Parkway. This consideration should include a full exploration of alternatives, including the alternative of preserving a substantial portion of the existing isolated pond at the site to ensure alignment with the goals and policies of the Parkway Plan.	Thank you for your comment. The proposed mitigation features would be designed to improve existing natural resource conditions by lowering the terrace surface to increase accessibility for fish species of concern as described in the American River Parkway Natural Resources Management Plan (2022). These mitigation features would be native habitat types that would typically be expected to occur in the Parkway. The features would enhance fish and wildlife habitat value, accommodate historical and cultural interpretive activities, and support public access with recreational trails. The American River Mitigation (Urrutia) site would be developed in accordance with the Parkway Plan and would not violate any local, State, or Federal regulations. Four alternatives for mitigation have been explored and subsequently evaluated by the ARCF project team for effects in the Draft SEIS/SEIR. The Urrutia technical memorandum will be provide as reference to in the appendixes of the document which provide alternative analysis.
18-1	Laura Taylor	Cordova Recreation and Park District	The loss of trees and vegetation along the levees will have a substantial visual impact on the parkway and on Larchmont Community Park. As seen on the attached photo, large oaks are located close to the top of the levee that is facing Larchmont Community Park. If flood lights are used to accommodate nighttime work this should also be considered a negative visual impact. Consider if the loss of vegetation on and adjacent to the levee can be mitigated by off-site planting. If mitigation planting is proposed within Larchmont Park a new planting plan must be reviewed and approved by CRPD.	USACE agrees that the loss of trees and vegetation will cause a visual impact on the American River Parkway and Larchmont Community Park. The 2016 ARCF GRR FEIS/FEIR already covered impacts to visual resources in the American River Parkway. USACE will analyze the impacts to visual resources on those using Larchmont Community Park for recreation in the SEIS. Visual impacts from lighting (both staging and construction) were not analyzed in the 2016 ARCF GRR FEIS/FEIR, so possible impacts from nighttime lighting on visual resources will be analyzed in the SEIS as well. Mitigation for lost riparian habitat is already included in the 2016 ARCF GRR FEIS/FEIR. Impacts on vegetation removed within recreational parks that may not be considered riparian habitat will be analyzed in the SEIS. USACE acknowledges that new plantings within Larchmont Community Park must be coordinated with Cordova Recreation and Park District.
18-2	Laura Taylor	Cordova Recreation and Park District	During the construction of levees, traffic by heavy vehicles will increase and there may be fewer parking spaces available in the vicinity of project areas and around staging sites. The disruption of the use of the park and nearby residential neighborhoods would be minimized if, as much as possible, the construction traffic is limited to the existing levee roads. Consider ways to minimize the need for heavy vehicle traffic through Larchmont Park and adjacent residential neighborhoods. Construction traffic should be minimized around the co-located park and school site (Larchmont Park and 0. W Erlewine Elementary School). Whenever possible, the existing levee roads should be used to access construction sites.	USACE will consider this when assessing traffic and noise in the SEIS. Haul routes were developed in a manner that would reduce the traffic through neighborhoods and by schools as much as feasible. The project footprint has been updated since the NOI was released and now shows that haul traffic would be limited to the east end of Larchmont Community Park in order to try to minimize the impacts of haul trucks on use of Larchmont Community Park. The 2016 ARCF GRR FEIS/FEIR already minimizes parking impacts. It says "The construction contractor would provide adequate parking for construction trucks, equipment, and construction workers within the designated staging areas throughout the construction period. If inadequate space for parking is available at a given work site, the construction contractor would provide an off-site staging area and as needed, coordinate the daily transport of construction vehicles, equipment, and personnel to and from the work site." Parking access in the area should not be significantly impacted as this mitigation measure is already in place and will still be applicable to the SEIS. Although some contracts may require night work, there would be no nightwork for Contract C3B near Larchmont Park.

Comment Number	Name of Commenter	Commenting Organization	Comment	Response
18-3	Laura Taylor	Cordova Recreation and Park District	The environmental studies for the American River Common Features project will need to consider noise from both construction and heavy vehicles. The noise generated by construction and heavy vehicles may have a negative impact on passive and programmed use of Larchmont Park. Consider if construction operations should be limited to certain hours to reduce impact to the use of the park and to the surrounding neighborhood.	USACE agrees that use of Larchmont Community Park will have impacts to recreation, noise, traffic, and dust. USACE will analyze these impacts in the SEIS and will consider possible mitigation measures to reduce these impacts. In addition, there will be no night work permitted for this portion of the project resulting in acceptable noise impacts to sensitive receptors as the project would adhere to Sacramento County, City of Sacramento noise ordnances.
18-4	Laura Taylor	Cordova Recreation and Park District	Parks are part of the public services that are normally available in residential subdivisions. Citizen access to parks and recreation services during levee improvements and the subsequent park restoration will be restricted. Evaluate if the loss of recreational opportunities and park land will need to be mitigated. Evaluate mitigation measures for the loss of recreational opportunities, loss of revenue to CRPD and local sport leagues, and the need for funding required to temporarily relocate the services.	USACE agrees that those wanting to recreate at Larchmont Park will be impacted by levee work. The 2016 ARCF GRR FEIS/FEIR (the overarching NEPA document for the ARCF Project) already lists the mitigation measure that "Any recreation facilities affected by the project would be replaced in-kind within the existing area". This mitigation measure will still be applicable for the SEIS so the commentors concerns of replacing damaged infrastructure is already being addressed with the overarching NEPA document. USACE will analyze in the SEIS how closure of a part of Larchmont Community Park will impact the loss of recreational opportunities for the neighborhood, revenue, and the cost of relocating recreational services.
18-5	Laura Taylor	Cordova Recreation and Park District	As reported during the November 2 scoping meeting, Sacramento's flood control project has been fully funded through the bipartisan Budget Act of 2018. However, it is not clear if the restoration of staging areas has been considered as a part of the construction costs.	The construction contract for this project will require in the Specifications that the contractor would replace staging areas to preexisting conditions. The funding for restoration of staging areas will be built into the contracts.
18-6	Laura Taylor	Cordova Recreation and Park District	CRPD welcomes the opportunity to provide feedback when alternative construction strategies are considered. This would allow CRPD's staff to update the General Manager and Board of Directors about how the levee project will impact Larchmont Community Park. Regular updates will be beneficial leading up to a requested Board action to approve a construction easement and funding agreement (if needed) for mitigation measures. It would also provide CRPD more time to plan for a disruption of park services.	Another commenting opportunity will be available during the 45-day public comment period upon release of the Draft SEIS/SEIR. USACE and the Project Partners will update CRPD to the greatest extent practicable.
19-1	Chris Conard	None	My comments on the NOI for the American River Common Features (ARCF) Supplemental EIS/Subsequent EIR will focus primarily on my concern that the existing habitat value of the Urrutia Pond site ("Quarry Pond") upstream of Discovery Park on the American River Parkway has not been carefully considered while it is planned as a means to meet mitigation requirements. During calls for input, there has been a varying degree of acknowledgement that the reconfiguration or even elimination of the pond to provide mitigation credit is contemplated. The Corps has not fully engaged on this topic during public scoping and information sharing, but it is clear from the public scoping meeting held on November 2, 2022, that there is a lot of interest from users and protectors of the Parkway that the existing habitat values of the Urrutia Pond be carefully taken into account. We have found there is consistent and substantial use of off-channel habitat for night roosting of birds that use the lower American River during the day. Along the lower stretches of the Parkway, the Urrutia Pond is an important and unique feature for these species. As an illustration, nearly 300 Common Goldeneyes, over 100 Common Mergansers, and many other water birds have flown to the site in the late evening (details of one of the surveys are here: https://ebird.org/checklist/S124339712). Loss of this roosting site would likely reduce the use of the lower stretches of the American River by several species of water birds. In earlier rounds of input for the American River Parkway Plan, I also stressed the importance of the site for periodic roosting and/or feeding by large numbers of Canvasbacks. Here is a sample of Canvasback numbers from surveys performed by Maureen Geiger of the Sacramento Audubon Society: (12/21/19 - count: 3500); (12/17/19 - count: 50); (12/5/15 - count: 4500); (12/6/14 - count: 4000); (12/7/13 - count: 2000). As the numbers above illustrate, there is a variable but consistently high number of Canvasbacks using this site for at least a decade (because of Covid-19 and access issues, there were no counts made in 2020 or 2021). Recent surveys have also detected pairing and nest-tending by Bald Eagles in a tree immediately adjacent to the site, showing another benefit of this habitat. The following species use still water and deeper water habitat, such as created by borrow pits, gravel pits, and other human activities. Despite their origins, these habitats have a lot of value and don't have natural analogs elsewhere on or immediately adjacent to the Parkway. On the lower stretch of the American River, the Urrutia Pond is unique in offering such habitat. [Canvasback, Ring-necked Duck, Bufflehead, Common Goldeneye, Barrow's Goldeneye, Hooded Merganser, Common Merganser, Ruddy Duck, Pied-billed Grebe, Eared Grebe, Western Grebe, Clark's Grebe, Double-crested Cormorant, American White Pelican, Caspian Tern, Forster's Tern, Great Blue Heron, Great Egret, Snowy Egret, Green Heron, Black-crowned Night-Heron, Osprey, Belted Kingfisher]	Thank you for your comment on the habitat value of the proposed American River Mitigation site, Urrutia, for migratory birds, including waterfowl. Various design alternatives have been proposed in order to preserve highest quality existing habitat while constructing new habitat for special status species mitigation as required under the Endangered Species Act and the Biological Opinions from U.S. Fish and Wildlife Service and National Marine Fisheries Services. As a Federal agency, USACE must comply with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Survey data, including data from eBird.org and iNaturalist, is used in the compilation of the Existing Conditions in Appendix B 4.1 Vegetation and Wildlife. Any temporary adverse impacts associated with construction would be documented in above referenced appendix. In addition, from Section 4.3: "Special-status species evaluated for potential to occur in the study area for the proposed project refinements were identified based on review of current USFWS species lists (USFWS 2023), resource databases and other information available from NMFS (NMFS 2021), California Natural Diversity Database (CNDDB) occurrences (CDFW 2023), and the California Native Plant Society (CNPS) online inventory (CNPS 2023). See Appendix for the complete species lists. Additional species addressed in the environmental analysis for projects in the vicinity or in local or State conservation planning efforts were also considered (SRCSD 2014). The CNDDB search (see Attachment XX) yielded occurrences of a total of 72 special-status plants and animals within the US Geological Survey 9-quad search area (Taylor Monument, Rio Linda, Sacramento West, Sacramento East, Carmichael, Clarksburg, Florin, Isleton, Rio Vista); 64 of these species have been documented within 5 miles of the study area."
19-2	Chris Conard	None	Before major changes to the pond are contemplated, systematic surveys of the site should be undertaken. I am happy to provide additional input and data from future surveys as I learn more about this important habitat component along the lower American River.	Biological surveys would be conducted once property acquisition is completed by the Project Partners.

Comment Number	Name of Commenter	Commenting Organization	Comment	Response
20-1	Dan Meier	Sacramento Native Plant Society, American River Parkway Coalition	Any mitigation sites to be considered under this environmental document should evaluate and document their suitability for specific habitat types. This evaluation and documentation is not included in the County's Natural Resource Management Plan (NRMP), nor is it adequate to simply state that these mitigation sites were selected by the USACE, CVFPB, and SAFCA in coordination with Sacramento County Department of Regional Parks. Maps must be provided showing habitat types by location. Also, specific documentation must be provided on key factors that were considered in evaluating habitat suitability such as soil analyses, hydrology, groundwater levels, flood, inundation frequency, habitat connectivity, and any other relevant factors.	Mitigation sites are selected based upon their ability to provide highest quality habitat for special status species impacted by the Proposed Action. It was not only the responsibility of USACE and Project Partners, but the Federal and State resources agencies. U.S. Fish and Wildlife Service provided support for the selection made. Habitat Management Plans will be developed for the Draft SEIS/SEIR, which will include the details such as maps with habitat types.
20-2	Dan Meier	Sacramento Native Plant Society, American River Parkway Coalition	If the Urrutia property is included as a potential mitigation site to address USACE American River Commons impacts, then a Conceptual Naturalization Plan must be developed for the Urrutia property consistent with recommendations of the Final Draft of the Lower American River NRMP. This Conceptual Naturalization Plan needs to be developed by County Regional Parks, American River stakeholders and jurisdictional agencies in advance of its use by the USACE as a mitigation site. The Conceptual Naturalization Plan must also take into consideration the previous planning for this site that included extensive public participation and permitting, and the land designations for the site included in the Sacramento County American River Parkway Plan (2008) adopted by state statute.	Thank you for your comment. Any habitat mitigation plans must be in compliance with the local and State regulations, including the American River Parkway Plan and as mentioned the Lower American River Natural Resources Management Plan. USACE and Project Partners engage with stakeholders, including County Parks, on a regular basis via the LAR BPWG and TRAC meetings.
21-1	Matt Carr	None	When would those materials [detailed drawings/plans] be made available online for public examination?	The requested designs would be made available to the public during the public review period when the Draft Reports are circulated.
22-1	None	None	There has been damage in recent years to existing ACOE mitigation sites within the Parkway. The ACOE needs to address these mitigation site impacts including how future sites will be preserved. Existing VELB status in the Parkway needs to be addressed in any proposals for additional mitigation for the species there. The Urrutia parcel being considered for mitigation has existing wildlife habitat values that need to be considered and preserved and/or enhanced.	Comment acknowledged. Habitat Management Plans are currently being developed as a part of the Draft SEIS/SEIR. Any lands used for project purposes are surveyed for wildlife and their habitat so that any temporary or permanent loss can be correctly mitigated for with the resource agencies.

Appendix B. Detailed Analyses

Appendix C. Air Quality Data

Magpie Creek Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Magpie Creek
Construction Start Date	4/1/2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	39.2
Location	38.668553264540066, -121.44362382608597
County	Sacramento
City	Sacramento
Air District	Sacramento Metropolitan AQMD
Air Basin	Sacramento Valley
TAZ	639
EDFZ	13
Electric Utility	Sacramento Municipal Utility District
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
User Defined Linear	1.00	Mile	4.00	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	27.3	19.4	237	284	0.79	6.28	16.7	23.0	5.86	4.20	10.1	—	102,176	102,176	6.53	8.63	103	105,015
Mit.	15.9	10.4	165	340	0.79	3.19	15.8	18.9	3.07	4.08	7.14	—	102,176	102,176	6.53	8.63	103	105,015
% Reduced	41%	46%	31%	-20%	—	49%	6%	18%	48%	3%	29%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.84	1.31	16.0	18.5	0.05	0.43	1.14	1.57	0.40	0.28	0.68	—	6,742	6,742	0.43	0.57	2.97	6,926
Mit.	1.00	0.64	10.8	22.5	0.05	0.19	1.05	1.25	0.19	0.27	0.46	—	6,764	6,764	0.43	0.57	2.97	6,948
% Reduced	46%	51%	32%	-22%	—	55%	7%	20%	54%	4%	33%	—	> -0.5%	> -0.5%	—	—	—	> -0.5%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.34	0.24	2.92	3.38	0.01	0.08	0.21	0.29	0.07	0.05	0.12	—	1,116	1,116	0.07	0.09	0.49	1,147
Mit.	0.18	0.12	1.97	4.11	0.01	0.04	0.19	0.23	0.03	0.05	0.08	—	1,120	1,120	0.07	0.09	0.49	1,150

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
% Reduced	46%	51%	32%	-22%	> -0.5%	55%	7%	20%	54%	4%	33%	—	> -0.5%	> -0.5%	> -0.5%	> -0.5%	—	> -0.5%
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	85.0	—	—	—	—	80.0	—	—	82.0	—	—	—	—	—	—	—
Unmit.	—	—	Yes	—	—	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—
Mit.	—	—	Yes	—	—	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	85.0	—	—	—	—	80.0	—	—	82.0	—	—	—	—	—	—	—
Unmit.	—	—	No	—	—	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—
Mit.	—	—	No	—	—	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	14.6	—	—	15.0	—	—	—	—	—	—	—
Unmit.	—	—	—	—	—	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—
Mit.	—	—	—	—	—	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—

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	27.3	19.4	237	284	0.79	6.28	16.7	23.0	5.86	4.20	10.1	—	102,176	102,176	6.53	8.63	103	105,015
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.84	1.31	16.0	18.5	0.05	0.43	1.14	1.57	0.40	0.28	0.68	—	6,742	6,742	0.43	0.57	2.97	6,926
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.34	0.24	2.92	3.38	0.01	0.08	0.21	0.29	0.07	0.05	0.12	—	1,116	1,116	0.07	0.09	0.49	1,147

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	15.9	10.4	165	340	0.79	3.19	15.8	18.9	3.07	4.08	7.14	—	102,176	102,176	6.53	8.63	103	105,015
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.00	0.64	10.8	22.5	0.05	0.19	1.05	1.25	0.19	0.27	0.46	—	6,764	6,764	0.43	0.57	2.97	6,948
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.18	0.12	1.97	4.11	0.01	0.04	0.19	0.23	0.03	0.05	0.08	—	1,120	1,120	0.07	0.09	0.49	1,150

3. Construction Emissions Details

3.1. Linear, Grubbing & Land Clearing (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	1.58	1.33	8.46	11.2	0.04	0.30	—	0.30	0.27	—	0.27	—	4,452	4,452	0.18	0.04	—	4,467
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	0.02	0.02	0.12	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	61.0	61.0	< 0.005	< 0.005	—	61.2
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.1	10.1	< 0.005	< 0.005	—	10.1
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.05	2.05	< 0.005	< 0.005	< 0.005	2.07
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.34	0.34	< 0.005	< 0.005	< 0.005	0.34
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. Linear, Grubbing & Land Clearing (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 Equipmen	0.42	0.42	2.19	22.6	0.04	0.08	—	0.08	0.08	—	0.08	—	4,452	4,452	0.18	0.04	—	4,467
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	0.01	0.01	0.03	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	61.0	61.0	< 0.005	< 0.005	—	61.2
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.1	10.1	< 0.005	< 0.005	—	10.1
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.05	2.05	< 0.005	< 0.005	< 0.005	2.07
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.34	0.34	< 0.005	< 0.005	< 0.005	0.34
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

3.3. Linear, Grubbing & Land Clearing (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 Equipmen	1.13	0.95	6.51	9.06	0.03	0.27	—	0.27	0.25	—	0.25	—	2,857	2,857	0.12	0.02	—	2,867
Dust From Material Movemen	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.06	0.05	0.34	0.47	< 0.005	0.01	—	0.01	0.01	—	0.01	—	149	149	0.01	< 0.005	—	149
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.6	24.6	< 0.005	< 0.005	—	24.7
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.35	0.08	5.13	2.09	0.02	0.06	0.81	0.87	0.06	0.22	0.27	—	3,028	3,028	0.27	0.48	5.80	3,184
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.78	7.78	< 0.005	< 0.005	0.01	7.88
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	0.02	< 0.005	0.28	0.11	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	158	158	0.01	0.03	0.13	166
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.31
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	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.1	26.1	< 0.005	< 0.005	0.02	27.4

3.4. Linear, Grubbing & Land Clearing (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 Equipmen	0.27	0.27	1.41	15.5	0.03	0.05	—	0.05	0.05	—	0.05	—	2,857	2,857	0.12	0.02	—	2,867
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.01	0.01	0.07	0.80	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	149	149	0.01	< 0.005	—	149
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.6	24.6	< 0.005	< 0.005	—	24.7
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.35	0.08	5.13	2.09	0.02	0.06	0.81	0.87	0.06	0.22	0.27	—	3,028	3,028	0.27	0.48	5.80	3,184
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.78	7.78	< 0.005	< 0.005	0.01	7.88
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	0.02	< 0.005	0.28	0.11	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	158	158	0.01	0.03	0.13	166
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.31
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	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.1	26.1	< 0.005	< 0.005	0.02	27.4

3.5. Linear, Grubbing & Land Clearing (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 Equipmen	2.56	2.15	15.8	21.6	0.06	0.58	—	0.58	0.53	—	0.53	—	6,134	6,134	0.25	0.05	—	6,155
Dust From Material Movemen	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.13	0.11	0.82	1.12	< 0.005	0.03	—	0.03	0.03	—	0.03	—	319	319	0.01	< 0.005	—	320
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.02	0.02	0.15	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	52.9	52.9	< 0.005	< 0.005	—	53.0
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.35	0.08	5.13	2.09	0.02	0.06	0.81	0.87	0.06	0.22	0.27	—	3,028	3,028	0.27	0.48	5.80	3,184
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.78	7.78	< 0.005	< 0.005	0.01	7.88
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	0.02	< 0.005	0.28	0.11	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	158	158	0.01	0.03	0.13	166
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.31
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	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.1	26.1	< 0.005	< 0.005	0.02	27.4

3.6. Linear, Grubbing & Land Clearing (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 Equipmen	0.77	0.74	5.90	33.6	0.06	0.16	—	0.16	0.16	—	0.16	—	6,134	6,134	0.25	0.05	—	6,155
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.04	0.04	0.31	1.75	< 0.005	0.01	—	0.01	0.01	—	0.01	—	319	319	0.01	< 0.005	—	320
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.06	0.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	52.9	52.9	< 0.005	< 0.005	—	53.0
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.35	0.08	5.13	2.09	0.02	0.06	0.81	0.87	0.06	0.22	0.27	—	3,028	3,028	0.27	0.48	5.80	3,184
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.78	7.78	< 0.005	< 0.005	0.01	7.88
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	0.02	< 0.005	0.28	0.11	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	158	158	0.01	0.03	0.13	166
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.31
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	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.1	26.1	< 0.005	< 0.005	0.02	27.4

3.7. Linear, Grubbing & Land Clearing (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 Equipmen	10.4	8.74	82.4	148	0.24	2.60	—	2.60	2.39	—	2.39	—	25,938	25,938	1.05	0.21	—	26,027
Dust From Material Movemen	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.54	0.46	4.29	7.72	0.01	0.14	—	0.14	0.12	—	0.12	—	1,350	1,350	0.05	0.01	—	1,355
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.10	0.08	0.78	1.41	< 0.005	0.02	—	0.02	0.02	—	0.02	—	224	224	0.01	< 0.005	—	224
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.35	0.08	5.13	2.09	0.02	0.06	0.81	0.87	0.06	0.22	0.27	—	3,028	3,028	0.27	0.48	5.80	3,184
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.78	7.78	< 0.005	< 0.005	0.01	7.88
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	0.02	< 0.005	0.28	0.11	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	158	158	0.01	0.03	0.13	166
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.31
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	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.1	26.1	< 0.005	< 0.005	0.02	27.4

3.8. Linear, Grubbing & Land Clearing (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 Equipmen	6.70	5.81	54.0	163	0.24	1.66	—	1.66	1.54	—	1.54	—	25,938	25,938	1.05	0.21	—	26,027
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.35	0.30	2.81	8.48	0.01	0.09	—	0.09	0.08	—	0.08	—	1,350	1,350	0.05	0.01	—	1,355
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.06	0.06	0.51	1.55	< 0.005	0.02	—	0.02	0.01	—	0.01	—	224	224	0.01	< 0.005	—	224
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.35	0.08	5.13	2.09	0.02	0.06	0.81	0.87	0.06	0.22	0.27	—	3,028	3,028	0.27	0.48	5.80	3,184
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.78	7.78	< 0.005	< 0.005	0.01	7.88
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	0.02	< 0.005	0.28	0.11	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	158	158	0.01	0.03	0.13	166
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.31
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	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.1	26.1	< 0.005	< 0.005	0.02	27.4

3.9. Linear, Grubbing & Land Clearing (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 Equipmen	0.60	0.50	5.02	8.06	0.01	0.22	—	0.22	0.20	—	0.20	—	1,221	1,221	0.05	0.01	—	1,226
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.07	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.7	16.7	< 0.005	< 0.005	—	16.8
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.77	2.77	< 0.005	< 0.005	—	2.78
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.05	2.05	< 0.005	< 0.005	< 0.005	2.07
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.34	0.34	< 0.005	< 0.005	< 0.005	0.34
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

3.10. Linear, Grubbing & Land Clearing (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 Equipmen	0.12	0.12	0.60	8.55	0.01	0.02	—	0.02	0.02	—	0.02	—	1,221	1,221	0.05	0.01	—	1,226
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.7	16.7	< 0.005	< 0.005	—	16.8
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.77	2.77	< 0.005	< 0.005	—	2.78
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.05	2.05	< 0.005	< 0.005	< 0.005	2.07
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.34	0.34	< 0.005	< 0.005	< 0.005	0.34
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

3.11. Linear, Grading & Excavation (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 Equipmen	0.51	0.43	3.73	4.55	0.01	0.16	—	0.16	0.14	—	0.14	—	1,088	1,088	0.04	0.01	—	1,092
Dust From Material Movemen	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.9	23.9	< 0.005	< 0.005	—	23.9
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.95	3.95	< 0.005	< 0.005	—	3.96
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.69	0.16	10.0	4.09	0.04	0.11	1.59	1.70	0.11	0.42	0.54	—	5,917	5,917	0.52	0.94	11.3	6,223
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.28	3.28	< 0.005	< 0.005	0.01	3.32
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	0.01	< 0.005	0.23	0.09	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	130	130	0.01	0.02	0.11	136
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.55
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.5	21.5	< 0.005	< 0.005	0.02	22.6

3.12. Linear, Grading & Excavation (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 Equipmen	0.11	0.11	1.13	6.32	0.01	0.02	—	0.02	0.02	—	0.02	—	1,088	1,088	0.04	0.01	—	1,092
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.9	23.9	< 0.005	< 0.005	—	23.9
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.95	3.95	< 0.005	< 0.005	—	3.96
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.69	0.16	10.0	4.09	0.04	0.11	1.59	1.70	0.11	0.42	0.54	—	5,917	5,917	0.52	0.94	11.3	6,223
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.28	3.28	< 0.005	< 0.005	0.01	3.32
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	0.01	< 0.005	0.23	0.09	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	130	130	0.01	0.02	0.11	136
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.55
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.5	21.5	< 0.005	< 0.005	0.02	22.6

3.13. Linear, Grading & Excavation (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 Equipmen	2.96	2.49	19.6	29.6	0.06	0.73	—	0.73	0.67	—	0.67	—	6,772	6,772	0.27	0.05	—	6,795
Dust From Material Movemen	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.06	0.05	0.38	0.57	< 0.005	0.01	—	0.01	0.01	—	0.01	—	130	130	0.01	< 0.005	—	130
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.5	21.5	< 0.005	< 0.005	—	21.6
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.42	0.10	6.13	2.50	0.02	0.07	0.97	1.04	0.07	0.26	0.33	—	3,619	3,619	0.32	0.58	6.93	3,806
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.87	2.87	< 0.005	< 0.005	< 0.005	2.90
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	0.01	< 0.005	0.12	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	69.4	69.4	0.01	0.01	0.06	72.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.47	0.47	< 0.005	< 0.005	< 0.005	0.48
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.5	11.5	< 0.005	< 0.005	0.01	12.1

3.14. Linear, Grading & Excavation (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 Equipmen	0.96	0.90	9.44	40.0	0.06	0.20	—	0.20	0.19	—	0.19	—	6,772	6,772	0.27	0.05	—	6,795
Dust From Material Movemen	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.02	0.02	0.18	0.77	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	130	130	0.01	< 0.005	—	130
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.03	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.5	21.5	< 0.005	< 0.005	—	21.6
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.42	0.10	6.13	2.50	0.02	0.07	0.97	1.04	0.07	0.26	0.33	—	3,619	3,619	0.32	0.58	6.93	3,806
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.87	2.87	< 0.005	< 0.005	< 0.005	2.90
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	0.01	< 0.005	0.12	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	69.4	69.4	0.01	0.01	0.06	72.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.47	0.47	< 0.005	< 0.005	< 0.005	0.48
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.5	11.5	< 0.005	< 0.005	0.01	12.1

3.15. Linear, Grading & Excavation (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 Equipmen	0.51	0.43	3.73	4.55	0.01	0.16	—	0.16	0.14	—	0.14	—	1,088	1,088	0.04	0.01	—	1,092
Dust From Material Movemen	—	—	—	—	—	—	0.17	0.17	—	0.03	0.03	—	—	—	—	—	—	—
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 Equipmen	0.04	0.03	0.28	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	80.5	80.5	< 0.005	< 0.005	—	80.8
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	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	—	13.4
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	2.13	0.50	31.1	12.7	0.12	0.35	4.94	5.29	0.35	1.32	1.67	—	18,401	18,401	1.62	2.94	35.3	19,351
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.1	11.1	< 0.005	< 0.005	0.02	11.2
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	0.16	0.04	2.43	0.94	0.01	0.03	0.36	0.38	0.03	0.10	0.12	—	1,361	1,361	0.12	0.22	1.12	1,430
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.83	1.83	< 0.005	< 0.005	< 0.005	1.85
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	0.03	0.01	0.44	0.17	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	225	225	0.02	0.04	0.19	237

3.16. Linear, Grading & Excavation (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 Equipmen	0.11	0.11	1.13	6.32	0.01	0.02	—	0.02	0.02	—	0.02	—	1,088	1,088	0.04	0.01	—	1,092
Dust From Material Movemen	—	—	—	—	—	—	0.07	0.07	—	0.01	0.01	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.01	0.01	0.08	0.47	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	80.5	80.5	< 0.005	< 0.005	—	80.8
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.3	13.3	< 0.005	< 0.005	—	13.4
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	2.13	0.50	31.1	12.7	0.12	0.35	4.94	5.29	0.35	1.32	1.67	—	18,401	18,401	1.62	2.94	35.3	19,351
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.1	11.1	< 0.005	< 0.005	0.02	11.2
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	0.16	0.04	2.43	0.94	0.01	0.03	0.36	0.38	0.03	0.10	0.12	—	1,361	1,361	0.12	0.22	1.12	1,430
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.83	1.83	< 0.005	< 0.005	< 0.005	1.85
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	0.03	0.01	0.44	0.17	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	225	225	0.02	0.04	0.19	237

3.17. Linear, Grading & Excavation (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 Equipmen	0.51	0.43	3.73	4.55	0.01	0.16	—	0.16	0.14	—	0.14	—	1,088	1,088	0.04	0.01	—	1,092
Dust From Material Movemen	—	—	—	—	—	—	0.11	0.11	—	0.02	0.02	—	—	—	—	—	—	—
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 Equipmen	0.01	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.9	11.9	< 0.005	< 0.005	—	12.0
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.97	1.97	< 0.005	< 0.005	—	1.98
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	1.37	0.32	20.0	8.19	0.08	0.22	3.17	3.40	0.22	0.85	1.07	—	11,835	11,835	1.04	1.89	22.7	12,446
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.66
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	0.01	< 0.005	0.23	0.09	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	130	130	0.01	0.02	0.11	136
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.27
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.5	21.5	< 0.005	< 0.005	0.02	22.6

3.18. Linear, Grading & Excavation (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 Equipmen	0.11	0.11	1.13	6.32	0.01	0.02	—	0.02	0.02	—	0.02	—	1,088	1,088	0.04	0.01	—	1,092
Dust From Material Movemen	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.9	11.9	< 0.005	< 0.005	—	12.0
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.97	1.97	< 0.005	< 0.005	—	1.98
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	1.37	0.32	20.0	8.19	0.08	0.22	3.17	3.40	0.22	0.85	1.07	—	11,835	11,835	1.04	1.89	22.7	12,446
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.66
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	0.01	< 0.005	0.23	0.09	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	130	130	0.01	0.02	0.11	136
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.27
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.5	21.5	< 0.005	< 0.005	0.02	22.6

3.19. Linear, Grading & Excavation (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 Equipmen	1.53	1.28	10.0	12.0	0.03	0.46	—	0.46	0.42	—	0.42	—	3,360	3,360	0.14	0.03	—	3,372
Dust From Material Movemen	—	—	—	—	—	—	0.56	0.56	—	0.06	0.06	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.09	0.08	0.61	0.73	< 0.005	0.03	—	0.03	0.03	—	0.03	—	203	203	0.01	< 0.005	—	203
Dust From Material Movemen	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.02	0.01	0.11	0.13	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	33.5	33.5	< 0.005	< 0.005	—	33.6
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.36	0.08	5.21	2.13	0.02	0.06	0.83	0.88	0.06	0.22	0.28	—	3,078	3,078	0.27	0.49	5.90	3,237
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.01	9.01	< 0.005	< 0.005	0.01	9.13
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	0.02	0.01	0.33	0.13	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	186	186	0.02	0.03	0.15	195
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.49	1.49	< 0.005	< 0.005	< 0.005	1.51
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	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.7	30.7	< 0.005	< 0.005	0.03	32.3

3.20. Linear, Grading & Excavation (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 Equipmen	0.33	0.33	2.25	18.7	0.03	0.06	—	0.06	0.06	—	0.06	—	3,360	3,360	0.14	0.03	—	3,372
Dust From Material Movemen	—	—	—	—	—	—	0.22	0.22	—	0.02	0.02	—	—	—	—	—	—	—
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 Equipmen	0.02	0.02	0.14	1.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	203	203	0.01	< 0.005	—	203
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.02	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	33.5	33.5	< 0.005	< 0.005	—	33.6
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.36	0.08	5.21	2.13	0.02	0.06	0.83	0.88	0.06	0.22	0.28	—	3,078	3,078	0.27	0.49	5.90	3,237
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.01	9.01	< 0.005	< 0.005	0.01	9.13
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	0.02	0.01	0.33	0.13	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	186	186	0.02	0.03	0.15	195
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.49	1.49	< 0.005	< 0.005	< 0.005	1.51
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	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.7	30.7	< 0.005	< 0.005	0.03	32.3

3.21. Linear, Grading & Excavation (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 Equipmen	0.71	0.60	4.29	7.78	0.01	0.22	—	0.22	0.20	—	0.20	—	1,242	1,242	0.05	0.01	—	1,246
Dust From Material Movemen	—	—	—	—	—	—	0.59	0.59	—	0.07	0.07	—	—	—	—	—	—	—
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 Equipmen	0.01	< 0.005	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.2	10.2	< 0.005	< 0.005	—	10.2
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.69	1.69	< 0.005	< 0.005	—	1.70
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.30	0.07	4.39	1.79	0.02	0.05	0.70	0.75	0.05	0.19	0.24	—	2,595	2,595	0.23	0.41	4.97	2,729
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.23	1.23	< 0.005	< 0.005	< 0.005	1.24
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	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.3	21.3	< 0.005	< 0.005	0.02	22.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.20	0.20	< 0.005	< 0.005	< 0.005	0.21
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.53	3.53	< 0.005	< 0.005	< 0.005	3.71

3.22. Linear, Grading & Excavation (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 Equipmen	0.13	0.13	1.20	8.69	0.01	0.02	—	0.02	0.02	—	0.02	—	1,242	1,242	0.05	0.01	—	1,246
Dust From Material Movemen	—	—	—	—	—	—	0.23	0.23	—	0.03	0.03	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.2	10.2	< 0.005	< 0.005	—	10.2
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.69	1.69	< 0.005	< 0.005	—	1.70
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.30	0.07	4.39	1.79	0.02	0.05	0.70	0.75	0.05	0.19	0.24	—	2,595	2,595	0.23	0.41	4.97	2,729
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.23	1.23	< 0.005	< 0.005	< 0.005	1.24
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	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.3	21.3	< 0.005	< 0.005	0.02	22.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.20	0.20	< 0.005	< 0.005	< 0.005	0.21
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.53	3.53	< 0.005	< 0.005	< 0.005	3.71

3.23. Linear, Grading & Excavation (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 Equipmen	0.33	0.28	2.22	2.44	0.01	0.08	—	0.08	0.07	—	0.07	—	768	768	0.03	0.01	—	771
Dust From Material Movemen	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.9	18.9	< 0.005	< 0.005	—	19.0
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.14	3.14	< 0.005	< 0.005	—	3.15
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.66	0.16	9.65	3.94	0.04	0.11	1.53	1.64	0.11	0.41	0.52	—	5,700	5,700	0.50	0.91	10.9	5,995
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.68	3.68	< 0.005	< 0.005	0.01	3.73
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	0.02	< 0.005	0.25	0.10	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	141	141	0.01	0.02	0.12	148
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.62
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	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.3	23.3	< 0.005	< 0.005	0.02	24.4

3.24. Linear, Grading & Excavation (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 Equipmen	0.08	0.08	0.97	4.08	0.01	0.01	—	0.01	0.01	—	0.01	—	768	768	0.03	0.01	—	771
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.9	18.9	< 0.005	< 0.005	—	19.0
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.14	3.14	< 0.005	< 0.005	—	3.15
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.66	0.16	9.65	3.94	0.04	0.11	1.53	1.64	0.11	0.41	0.52	—	5,700	5,700	0.50	0.91	10.9	5,995
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.68	3.68	< 0.005	< 0.005	0.01	3.73
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	0.02	< 0.005	0.25	0.10	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	141	141	0.01	0.02	0.12	148
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.62
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	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.3	23.3	< 0.005	< 0.005	0.02	24.4

3.25. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	0.76	0.64	5.50	5.49	0.02	0.21	—	0.21	0.19	—	0.19	—	1,758	1,758	0.07	0.01	—	1,764
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.04	0.04	0.30	0.30	< 0.005	0.01	—	0.01	0.01	—	0.01	—	96.3	96.3	< 0.005	< 0.005	—	96.7
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.9	15.9	< 0.005	< 0.005	—	16.0
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.19	8.19	< 0.005	< 0.005	0.01	8.30
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.36	1.36	< 0.005	< 0.005	< 0.005	1.37
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

3.26. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	0.17	0.17	1.46	8.96	0.02	0.03	—	0.03	0.03	—	0.03	—	1,758	1,758	0.07	0.01	—	1,764
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.08	0.49	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	96.3	96.3	< 0.005	< 0.005	—	96.7
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.9	15.9	< 0.005	< 0.005	—	16.0
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.19	8.19	< 0.005	< 0.005	0.01	8.30
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.36	1.36	< 0.005	< 0.005	< 0.005	1.37
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

3.27. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	0.67	0.57	5.18	7.95	0.01	0.20	—	0.20	0.18	—	0.18	—	1,184	1,184	0.05	0.01	—	1,188
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.01	< 0.005	0.04	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.73	9.73	< 0.005	< 0.005	—	9.77
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.61	1.61	< 0.005	< 0.005	—	1.62
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.28	0.07	4.15	1.70	0.02	0.05	0.66	0.70	0.05	0.18	0.22	—	2,453	2,453	0.22	0.39	4.70	2,580
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.23	1.23	< 0.005	< 0.005	< 0.005	1.24
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	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.2	20.2	< 0.005	< 0.005	0.02	21.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.20	0.20	< 0.005	< 0.005	< 0.005	0.21
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.34	3.34	< 0.005	< 0.005	< 0.005	3.51

3.28. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	0.13	0.13	1.77	8.28	0.01	0.02	—	0.02	0.02	—	0.02	—	1,184	1,184	0.05	0.01	—	1,188
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.73	9.73	< 0.005	< 0.005	—	9.77
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.61	1.61	< 0.005	< 0.005	—	1.62
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.28	0.07	4.15	1.70	0.02	0.05	0.66	0.70	0.05	0.18	0.22	—	2,453	2,453	0.22	0.39	4.70	2,580
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.23	1.23	< 0.005	< 0.005	< 0.005	1.24
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	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.2	20.2	< 0.005	< 0.005	0.02	21.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.20	0.20	< 0.005	< 0.005	< 0.005	0.21
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.34	3.34	< 0.005	< 0.005	< 0.005	3.51

3.29. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	2.80	2.35	17.6	27.5	0.05	0.78	—	0.78	0.72	—	0.72	—	5,150	5,150	0.21	0.04	—	5,168
Dust From Material Movemen	—	—	—	—	—	—	0.62	0.62	—	0.07	0.07	—	—	—	—	—	—	—
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 Equipmen	0.11	0.09	0.68	1.05	< 0.005	0.03	—	0.03	0.03	—	0.03	—	198	198	0.01	< 0.005	—	198
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.02	0.02	0.12	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	32.7	32.7	< 0.005	< 0.005	—	32.8
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.43	0.10	6.35	2.59	0.02	0.07	1.01	1.08	0.07	0.27	0.34	—	3,750	3,750	0.33	0.60	7.18	3,944
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.73	5.73	< 0.005	< 0.005	0.01	5.81
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	0.02	< 0.005	0.26	0.10	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	144	144	0.01	0.02	0.12	151
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.95	0.95	< 0.005	< 0.005	< 0.005	0.96
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	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.8	23.8	< 0.005	< 0.005	0.02	25.0

3.30. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	0.80	0.75	6.50	33.3	0.05	0.16	—	0.16	0.16	—	0.16	—	5,150	5,150	0.21	0.04	—	5,168
Dust From Material Movemen	—	—	—	—	—	—	0.24	0.24	—	0.03	0.03	—	—	—	—	—	—	—
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 Equipmen	0.03	0.03	0.25	1.28	< 0.005	0.01	—	0.01	0.01	—	0.01	—	198	198	0.01	< 0.005	—	198
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.05	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	32.7	32.7	< 0.005	< 0.005	—	32.8
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.43	0.10	6.35	2.59	0.02	0.07	1.01	1.08	0.07	0.27	0.34	—	3,750	3,750	0.33	0.60	7.18	3,944
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.73	5.73	< 0.005	< 0.005	0.01	5.81
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	0.02	< 0.005	0.26	0.10	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	144	144	0.01	0.02	0.12	151
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.95	0.95	< 0.005	< 0.005	< 0.005	0.96
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	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.8	23.8	< 0.005	< 0.005	0.02	25.0

3.31. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	0.51	0.43	3.73	4.55	0.01	0.16	—	0.16	0.14	—	0.14	—	1,088	1,088	0.04	0.01	—	1,092
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.98	2.98	< 0.005	< 0.005	—	2.99
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.49	0.49	< 0.005	< 0.005	—	0.50
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.21	0.05	2.99	1.22	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,769	1,769	0.16	0.28	3.39	1,860
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.41
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.85	4.85	< 0.005	< 0.005	< 0.005	5.09
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.84

3.32. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	0.11	0.11	1.13	6.32	0.01	0.02	—	0.02	0.02	—	0.02	—	1,088	1,088	0.04	0.01	—	1,092
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.98	2.98	< 0.005	< 0.005	—	2.99
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.49	0.49	< 0.005	< 0.005	—	0.50
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.21	0.05	2.99	1.22	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,769	1,769	0.16	0.28	3.39	1,860
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.41
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.85	4.85	< 0.005	< 0.005	< 0.005	5.09
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.84

3.33. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	2.47	2.07	15.3	24.4	0.04	0.66	—	0.66	0.61	—	0.61	—	4,688	4,688	0.19	0.04	—	4,704
Dust From Material Movemen	—	—	—	—	—	—	0.58	0.58	—	0.06	0.06	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.08	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.7	25.7	< 0.005	< 0.005	—	25.8
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.25	4.25	< 0.005	< 0.005	—	4.27
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.25	0.06	3.59	1.47	0.01	0.04	0.57	0.61	0.04	0.15	0.19	—	2,123	2,123	0.19	0.34	4.07	2,232
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.83
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.6	11.6	< 0.005	< 0.005	0.01	12.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.93	1.93	< 0.005	< 0.005	< 0.005	2.02

3.34. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	0.88	0.80	5.88	30.1	0.04	0.19	—	0.19	0.18	—	0.18	—	4,688	4,688	0.19	0.04	—	4,704
Dust From Material Movemen	—	—	—	—	—	—	0.23	0.23	—	0.03	0.03	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.03	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.7	25.7	< 0.005	< 0.005	—	25.8
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.25	4.25	< 0.005	< 0.005	—	4.27
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.25	0.06	3.59	1.47	0.01	0.04	0.57	0.61	0.04	0.15	0.19	—	2,123	2,123	0.19	0.34	4.07	2,232
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.83
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.6	11.6	< 0.005	< 0.005	0.01	12.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.93	1.93	< 0.005	< 0.005	< 0.005	2.02

3.35. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	1.26	1.06	8.39	10.5	0.03	0.33	—	0.33	0.30	—	0.30	—	3,027	3,027	0.12	0.02	—	3,037
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	0.10	0.09	0.69	0.87	< 0.005	0.03	—	0.03	0.02	—	0.02	—	249	249	0.01	< 0.005	—	250
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.02	0.02	0.13	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	41.2	41.2	< 0.005	< 0.005	—	41.3
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.3	12.3	< 0.005	< 0.005	0.02	12.4
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.03	2.03	< 0.005	< 0.005	< 0.005	2.06
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

3.36. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	0.29	0.29	1.49	16.4	0.03	0.06	—	0.06	0.06	—	0.06	—	3,027	3,027	0.12	0.02	—	3,037
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	0.02	0.02	0.12	1.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	249	249	0.01	< 0.005	—	250
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.25	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	41.2	41.2	< 0.005	< 0.005	—	41.3
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.3	12.3	< 0.005	< 0.005	0.02	12.4
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.03	2.03	< 0.005	< 0.005	< 0.005	2.06
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

3.37. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	0.72	0.60	5.06	8.83	0.01	0.21	—	0.21	0.19	—	0.19	—	1,368	1,368	0.06	0.01	—	1,372
Dust From Material Movemen	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.04	0.03	0.26	0.46	< 0.005	0.01	—	0.01	0.01	—	0.01	—	71.2	71.2	< 0.005	< 0.005	—	71.4
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.05	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.8	11.8	< 0.005	< 0.005	—	11.8
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.73	0.17	10.7	4.38	0.04	0.12	1.70	1.82	0.12	0.45	0.57	—	6,331	6,331	0.56	1.01	12.1	6,658
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.78	7.78	< 0.005	< 0.005	0.01	7.88
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	0.04	0.01	0.59	0.23	< 0.005	0.01	0.09	0.09	0.01	0.02	0.03	—	330	330	0.03	0.05	0.27	346
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.31
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	0.01	< 0.005	0.11	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	54.6	54.6	< 0.005	0.01	0.05	57.3

3.38. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	0.15	0.15	1.86	9.59	0.01	0.03	—	0.03	0.03	—	0.03	—	1,368	1,368	0.06	0.01	—	1,372
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.10	0.50	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	71.2	71.2	< 0.005	< 0.005	—	71.4
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.02	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.8	11.8	< 0.005	< 0.005	—	11.8
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.73	0.17	10.7	4.38	0.04	0.12	1.70	1.82	0.12	0.45	0.57	—	6,331	6,331	0.56	1.01	12.1	6,658
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.78	7.78	< 0.005	< 0.005	0.01	7.88
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	0.04	0.01	0.59	0.23	< 0.005	0.01	0.09	0.09	0.01	0.02	0.03	—	330	330	0.03	0.05	0.27	346
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.31
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	0.01	< 0.005	0.11	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	54.6	54.6	< 0.005	0.01	0.05	57.3

3.39. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	1.53	1.28	8.85	17.0	0.03	0.42	—	0.42	0.39	—	0.39	—	2,731	2,731	0.11	0.02	—	2,740
Dust From Material Movemen	—	—	—	—	—	—	0.57	0.57	—	0.06	0.06	—	—	—	—	—	—	—
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 Equipmen	0.12	0.10	0.68	1.31	< 0.005	0.03	—	0.03	0.03	—	0.03	—	210	210	0.01	< 0.005	—	210
Dust From Material Movemen	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.02	0.02	0.12	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.7	34.7	< 0.005	< 0.005	—	34.8
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.55	0.13	8.02	3.28	0.03	0.09	1.27	1.36	0.09	0.34	0.43	—	4,738	4,738	0.42	0.76	9.08	4,983
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.5	11.5	< 0.005	< 0.005	0.02	11.6
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	0.04	0.01	0.65	0.25	< 0.005	0.01	0.10	0.10	0.01	0.03	0.03	—	363	363	0.03	0.06	0.30	382
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.90	1.90	< 0.005	< 0.005	< 0.005	1.92
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	0.01	< 0.005	0.12	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	60.2	60.2	0.01	0.01	0.05	63.2

3.40. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	0.34	0.34	5.05	21.1	0.03	0.06	—	0.06	0.06	—	0.06	—	3,014	3,014	0.12	0.02	—	3,025
Dust From Material Movemen	—	—	—	—	—	—	0.22	0.22	—	0.02	0.02	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.03	0.03	0.39	1.62	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	231	231	0.01	< 0.005	—	232
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.07	0.30	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.3	38.3	< 0.005	< 0.005	—	38.4
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.55	0.13	8.02	3.28	0.03	0.09	1.27	1.36	0.09	0.34	0.43	—	4,738	4,738	0.42	0.76	9.08	4,983
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.5	11.5	< 0.005	< 0.005	0.02	11.6
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	0.04	0.01	0.65	0.25	< 0.005	0.01	0.10	0.10	0.01	0.03	0.03	—	363	363	0.03	0.06	0.30	382
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.90	1.90	< 0.005	< 0.005	< 0.005	1.92
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	0.01	< 0.005	0.12	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	60.2	60.2	0.01	0.01	0.05	63.2

3.41. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	0.18	0.15	1.52	2.12	< 0.005	0.08	—	0.08	0.07	—	0.07	—	320	320	0.01	< 0.005	—	321
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.88	0.88	< 0.005	< 0.005	—	0.88
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.15	0.15	< 0.005	< 0.005	—	0.15
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.01	< 0.005	0.12	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	70.8	70.8	0.01	0.01	0.14	74.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.41
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03

3.42. Linear, Drainage, Utilities, & Sub-Grade (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 Equipmen	0.03	0.03	0.16	2.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	320	320	0.01	< 0.005	—	321
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.88	0.88	< 0.005	< 0.005	—	0.88
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.15	0.15	< 0.005	< 0.005	—	0.15
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.01	< 0.005	0.12	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	70.8	70.8	0.01	0.01	0.14	74.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.41
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03

3.43. Linear, Paving (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 Equipmen	0.93	0.79	6.39	8.09	0.01	0.28	—	0.28	0.26	—	0.26	—	1,198	1,198	0.05	0.01	—	1,202
Dust From Material Movemen	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.28	3.28	< 0.005	< 0.005	—	3.29
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.54	0.54	< 0.005	< 0.005	—	0.55
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.41	0.10	5.99	2.45	0.02	0.07	0.95	1.02	0.07	0.25	0.32	—	3,538	3,538	0.31	0.56	6.78	3,721
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.41
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.69	9.69	< 0.005	< 0.005	0.01	10.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.60	1.60	< 0.005	< 0.005	< 0.005	1.69

3.44. Linear, Paving (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 Equipmen	0.15	0.15	2.97	8.40	0.01	0.02	—	0.02	0.02	—	0.02	—	1,198	1,198	0.05	0.01	—	1,202
Dust From Material Movemen	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.28	3.28	< 0.005	< 0.005	—	3.29
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.54	0.54	< 0.005	< 0.005	—	0.55
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.06	0.06	0.04	0.80	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.54	166
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	0.41	0.10	5.99	2.45	0.02	0.07	0.95	1.02	0.07	0.25	0.32	—	3,538	3,538	0.31	0.56	6.78	3,721
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.41
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.69	9.69	< 0.005	< 0.005	0.01	10.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.60	1.60	< 0.005	< 0.005	< 0.005	1.69

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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
Mobilization	Linear, Grubbing & Land Clearing	4/1/2027	4/6/2027	6.00	5.00	—
High Flow Bypass - Clearing and Grubbing	Linear, Grubbing & Land Clearing	4/7/2027	4/28/2027	6.00	19.0	—
Channel Slope Flattening - Clearing and Grubbing	Linear, Grubbing & Land Clearing	6/22/2027	7/13/2027	6.00	19.0	—
MPC Levee and Raley Crossing - Clearing and Grubbing	Linear, Grubbing & Land Clearing	6/24/2027	7/15/2027	6.00	19.0	—
Demobilization	Linear, Grubbing & Land Clearing	9/23/2027	9/28/2027	6.00	5.00	—
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Linear, Grading & Excavation	4/29/2027	5/7/2027	6.00	8.00	—
Channel Slope Flattening - Access Road	Linear, Grading & Excavation	6/22/2027	6/29/2027	6.00	7.00	—
Channel Slope Flattening - Excavation	Linear, Grading & Excavation	6/22/2027	7/22/2027	6.00	27.0	—
MPC Levee and Raley Crossing - Channel Excavation	Linear, Grading & Excavation	6/24/2027	6/28/2027	6.00	4.00	—
MPC Levee and Raley Crossing - Levee Construction	Linear, Grading & Excavation	6/24/2027	7/19/2027	6.00	22.0	—
MPC Levee and Raley Crossing - Surfacing	Linear, Grading & Excavation	6/24/2027	6/26/2027	6.00	3.00	—
MPC Levee and Raley Crossing - Box Culvert Excavation	Linear, Grading & Excavation	6/24/2027	7/3/2027	6.00	9.00	—
High Flow Bypass - Culvert Installation	Linear, Drainage, Utilities, & Sub-Grade	5/8/2027	5/31/2027	6.00	20.0	—
High Flow Bypass - Culvert Backfill	Linear, Drainage, Utilities, & Sub-Grade	6/1/2027	6/3/2027	6.00	3.00	—
High Flow Bypass - Riprap Installation	Linear, Drainage, Utilities, & Sub-Grade	6/4/2027	6/19/2027	6.00	14.0	—

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
High Flow Bypass - Plug Removal	Linear, Drainage, Utilities, & Sub-Grade	6/20/2027	6/21/2027	6.00	1.00	—
Channel Slope Flattening - Riprap Installation	Linear, Drainage, Utilities, & Sub-Grade	6/22/2027	6/23/2027	6.00	2.00	—
MPC Levee and Raley Crossing - Box Culvert Installation	Linear, Drainage, Utilities, & Sub-Grade	6/24/2027	7/28/2027	6.00	30.0	—
MPC Levee and Raley Crossing - Backfill	Linear, Drainage, Utilities, & Sub-Grade	7/29/2027	8/19/2027	6.00	19.0	—
MPC Levee and Raley Crossing - Riprap Installation	Linear, Drainage, Utilities, & Sub-Grade	8/20/2027	9/21/2027	6.00	28.0	—
MPC Levee and Raley Crossing - Turf Establishment	Linear, Drainage, Utilities, & Sub-Grade	9/23/2027	9/23/2027	6.00	1.00	—
MPC Levee and Raley Crossing - Road Paving/Stiping	Linear, Paving	9/22/2027	9/22/2027	6.00	1.00	—

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
Mobilization	Off-Highway Tractors	Diesel	Average	1.00	8.00	245	0.44
Mobilization	Off-Highway Tractors	Diesel	Average	1.00	8.00	250	0.44
Mobilization	Off-Highway Tractors	Diesel	Average	1.00	8.00	182	0.44
Mobilization	Other Material Handling Equipment	Diesel	Average	1.00	8.00	93.0	0.40
Mobilization	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
High Flow Bypass - Clearing and Grubbing	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
High Flow Bypass - Clearing and Grubbing	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
High Flow Bypass - Clearing and Grubbing	Tractors/Loaders/Backh	Diesel	Average	1.00	8.00	100	0.37
High Flow Bypass - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	250	0.37
Channel Slope Flattening - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Channel Slope Flattening - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Channel Slope Flattening - Clearing and Grubbing	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Channel Slope Flattening - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	250	0.37
Channel Slope Flattening - Clearing and Grubbing	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
Channel Slope Flattening - Clearing and Grubbing	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Channel Slope Flattening - Clearing and Grubbing	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Channel Slope Flattening - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	245	0.37
MPC Levee and Raley Crossing - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
MPC Levee and Raley Crossing - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	3.00	182	84.0	0.37
MPC Levee and Raley Crossing - Clearing and Grubbing	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
MPC Levee and Raley Crossing - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	250	0.37
MPC Levee and Raley Crossing - Clearing and Grubbing	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Clearing and Grubbing	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	245	0.37

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
MPC Levee and Raley Crossing - Clearing and Grubbing	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
Demobilization	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Demobilization	Other Construction Equipment	Diesel	Average	2.00	8.00	82.0	0.42
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	182	0.37
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
Channel Slope Flattening - Access Road	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Channel Slope Flattening - Access Road	Tractors/Loaders/Backh	Diesel	Average	5.00	8.00	84.0	0.37
Channel Slope Flattening - Access Road	Rollers	Diesel	Average	4.00	8.00	36.0	0.38
Channel Slope Flattening - Access Road	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	245	0.37
Channel Slope Flattening - Access Road	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	250	0.37
Channel Slope Flattening - Access Road	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	155	0.37
Channel Slope Flattening - Excavation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Channel Slope Flattening - Excavation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	182	0.37
Channel Slope Flattening - Excavation	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
MPC Levee and Raley Crossing - Channel Excavation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
MPC Levee and Raley Crossing - Channel Excavation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	182	0.37
MPC Levee and Raley Crossing - Channel Excavation	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
MPC Levee and Raley Crossing - Levee Construction	Graders	Diesel	Average	1.00	8.00	148	0.41
MPC Levee and Raley Crossing - Levee Construction	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
MPC Levee and Raley Crossing - Levee Construction	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Levee Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	245	0.37
MPC Levee and Raley Crossing - Levee Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	250	0.37
MPC Levee and Raley Crossing - Levee Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	182	0.37
MPC Levee and Raley Crossing - Surfacing	Graders	Diesel	Average	1.00	8.00	148	0.41
MPC Levee and Raley Crossing - Surfacing	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Surfacing	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	155	0.37
MPC Levee and Raley Crossing - Box Culvert Excavation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Box Culvert Excavation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	182	0.37

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
High Flow Bypass - Culvert Installation	Cranes	Diesel	Average	1.00	8.00	367	0.29
High Flow Bypass - Culvert Installation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
High Flow Bypass - Culvert Installation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	182	0.37
High Flow Bypass - Culvert Backfill	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
High Flow Bypass - Culvert Backfill	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
High Flow Bypass - Culvert Backfill	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
High Flow Bypass - Culvert Backfill	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
High Flow Bypass - Culvert Backfill	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
High Flow Bypass - Riprap Installation	Rollers	Diesel	Average	4.00	8.00	36.0	0.38
High Flow Bypass - Riprap Installation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	155	0.37
High Flow Bypass - Riprap Installation	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
High Flow Bypass - Riprap Installation	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
High Flow Bypass - Riprap Installation	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
High Flow Bypass - Riprap Installation	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
High Flow Bypass - Riprap Installation	Graders	Diesel	Average	1.00	8.00	148	0.41
High Flow Bypass - Riprap Installation	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
High Flow Bypass - Plug Removal	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
High Flow Bypass - Plug Removal	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	182	0.37
High Flow Bypass - Plug Removal	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
Channel Slope Flattening - Riprap Installation	Rollers	Diesel	Average	4.00	8.00	36.0	0.38
Channel Slope Flattening - Riprap Installation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	155	0.37
Channel Slope Flattening - Riprap Installation	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Channel Slope Flattening - Riprap Installation	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Channel Slope Flattening - Riprap Installation	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Channel Slope Flattening - Riprap Installation	Graders	Diesel	Average	1.00	8.00	148	0.41
Channel Slope Flattening - Riprap Installation	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
MPC Levee and Raley Crossing - Box Culvert Installation	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
MPC Levee and Raley Crossing - Box Culvert Installation	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
MPC Levee and Raley Crossing - Box Culvert Installation	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
MPC Levee and Raley Crossing - Box Culvert Installation	Cranes	Diesel	Average	1.00	8.00	367	0.29
MPC Levee and Raley Crossing - Backfill	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Backfill	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
MPC Levee and Raley Crossing - Backfill	Rollers	Diesel	Average	1.00	8.00	36.0	0.38

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
MPC Levee and Raley Crossing - Backfill	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	138	0.37
MPC Levee and Raley Crossing - Backfill	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
MPC Levee and Raley Crossing - Riprap Installation	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Riprap Installation	Rollers	Diesel	Average	3.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Riprap Installation	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	155	0.37
MPC Levee and Raley Crossing - Riprap Installation	Graders	Diesel	Average	1.00	8.00	148	0.41
MPC Levee and Raley Crossing - Turf Establishment	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
MPC Levee and Raley Crossing - Road Paving/Stiping	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
MPC Levee and Raley Crossing - Road Paving/Stiping	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Road Paving/Stiping	Rollers	Diesel	Average	2.00	8.00	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Mobilization	Off-Highway Tractors	Diesel	Tier 4 Final	1.00	8.00	245	0.44
Mobilization	Off-Highway Tractors	Diesel	Tier 4 Final	1.00	8.00	250	0.44
Mobilization	Off-Highway Tractors	Diesel	Tier 4 Final	1.00	8.00	182	0.44
Mobilization	Other Material Handling Equipment	Diesel	Tier 4 Final	1.00	8.00	93.0	0.40
Mobilization	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	376	0.38
High Flow Bypass - Clearing and Grubbing	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	376	0.38

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
High Flow Bypass - Clearing and Grubbing	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	82.0	0.42
High Flow Bypass - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	100	0.37
High Flow Bypass - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	250	0.37
Channel Slope Flattening - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Channel Slope Flattening - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Channel Slope Flattening - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Channel Slope Flattening - Clearing and Grubbing	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	8.00	376	0.38
Channel Slope Flattening - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	250	0.37
Channel Slope Flattening - Clearing and Grubbing	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	82.0	0.42
Channel Slope Flattening - Clearing and Grubbing	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Channel Slope Flattening - Clearing and Grubbing	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Channel Slope Flattening - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	245	0.37
MPC Levee and Raley Crossing - Clearing and Grubbing	Tractors/Loaders/Backh	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
MPC Levee and Raley Crossing - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	2.00	182	84.0	0.37
MPC Levee and Raley Crossing - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	182	84.0	0.37
MPC Levee and Raley Crossing - Clearing and Grubbing	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	8.00	376	0.38
MPC Levee and Raley Crossing - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	250	0.37

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
MPC Levee and Raley Crossing - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	250	0.37
MPC Levee and Raley Crossing - Clearing and Grubbing	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Clearing and Grubbing	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	245	0.37
MPC Levee and Raley Crossing - Clearing and Grubbing	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	82.0	0.42
Demobilization	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Demobilization	Other Construction Equipment	Diesel	Tier 4 Final	2.00	8.00	82.0	0.42
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	182	0.37
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	82.0	0.42
Channel Slope Flattening - Access Road	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Channel Slope Flattening - Access Road	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Channel Slope Flattening - Access Road	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Channel Slope Flattening - Access Road	Rollers	Diesel	Tier 4 Final	4.00	8.00	36.0	0.38
Channel Slope Flattening - Access Road	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	245	0.37
Channel Slope Flattening - Access Road	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	250	0.37
Channel Slope Flattening - Access Road	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	155	0.37

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Channel Slope Flattening - Excavation	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Channel Slope Flattening - Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	182	0.37
Channel Slope Flattening - Excavation	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	82.0	0.42
MPC Levee and Raley Crossing - Channel Excavation	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Channel Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	182	0.37
MPC Levee and Raley Crossing - Channel Excavation	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	82.0	0.42
MPC Levee and Raley Crossing - Levee Construction	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
MPC Levee and Raley Crossing - Levee Construction	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	82.0	0.42
MPC Levee and Raley Crossing - Levee Construction	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Levee Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	245	0.37
MPC Levee and Raley Crossing - Levee Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	250	0.37
MPC Levee and Raley Crossing - Levee Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	182	0.37
MPC Levee and Raley Crossing - Surfacing	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
MPC Levee and Raley Crossing - Surfacing	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Surfacing	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	155	0.37
MPC Levee and Raley Crossing - Box Culvert Excavation	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Box Culvert Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	182	0.37

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
High Flow Bypass - Culvert Installation	Cranes	Diesel	Tier 4 Final	1.00	8.00	367	0.29
High Flow Bypass - Culvert Installation	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
High Flow Bypass - Culvert Installation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	182	0.37
High Flow Bypass - Culvert Backfill	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
High Flow Bypass - Culvert Backfill	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
High Flow Bypass - Culvert Backfill	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
High Flow Bypass - Culvert Backfill	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
High Flow Bypass - Culvert Backfill	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	82.0	0.42
High Flow Bypass - Riprap Installation	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
High Flow Bypass - Riprap Installation	Rollers	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
High Flow Bypass - Riprap Installation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	155	0.37
High Flow Bypass - Riprap Installation	Bore/Drill Rigs	Diesel	Tier 4 Final	1.00	8.00	83.0	0.50
High Flow Bypass - Riprap Installation	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	376	0.38
High Flow Bypass - Riprap Installation	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	82.0	0.42
High Flow Bypass - Riprap Installation	Rollers	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
High Flow Bypass - Riprap Installation	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
High Flow Bypass - Riprap Installation	Pavers	Diesel	Tier 4 Final	2.00	8.00	81.0	0.42

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
High Flow Bypass - Plug Removal	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
High Flow Bypass - Plug Removal	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	182	0.37
High Flow Bypass - Plug Removal	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	82.0	0.42
Channel Slope Flattening - Riprap Installation	Rollers	Diesel	Average	3.00	8.00	36.0	0.38
Channel Slope Flattening - Riprap Installation	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Channel Slope Flattening - Riprap Installation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	155	0.37
Channel Slope Flattening - Riprap Installation	Bore/Drill Rigs	Diesel	Tier 4 Final	1.00	8.00	83.0	0.50
Channel Slope Flattening - Riprap Installation	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	376	0.38
Channel Slope Flattening - Riprap Installation	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Channel Slope Flattening - Riprap Installation	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Channel Slope Flattening - Riprap Installation	Pavers	Diesel	Tier 4 Final	2.00	8.00	81.0	0.42
MPC Levee and Raley Crossing - Box Culvert Installation	Bore/Drill Rigs	Diesel	Tier 4 Final	1.00	8.00	83.0	0.50
MPC Levee and Raley Crossing - Box Culvert Installation	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	376	0.38
MPC Levee and Raley Crossing - Box Culvert Installation	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	82.0	0.42
MPC Levee and Raley Crossing - Box Culvert Installation	Cranes	Diesel	Tier 4 Final	1.00	8.00	367	0.29
MPC Levee and Raley Crossing - Backfill	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
MPC Levee and Raley Crossing - Backfill	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
MPC Levee and Raley Crossing - Backfill	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Backfill	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	138	0.37
MPC Levee and Raley Crossing - Backfill	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	82.0	0.42
MPC Levee and Raley Crossing - Riprap Installation	Rollers	Diesel	Tier 4 Final	3.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Riprap Installation	Rollers	Diesel	Tier 4 Final	3.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Riprap Installation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	8.00	155	0.37
MPC Levee and Raley Crossing - Riprap Installation	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
MPC Levee and Raley Crossing - Turf Establishment	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	82.0	0.42
MPC Levee and Raley Crossing - Road Paving/Stiping	Pavers	Diesel	Tier 4 Final	2.00	8.00	81.0	0.42
MPC Levee and Raley Crossing - Road Paving/Stiping	Rollers	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
MPC Levee and Raley Crossing - Road Paving/Stiping	Rollers	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Mobilization	—	—	—	—
Mobilization	Worker	15.0	14.3	LDA,LDT1,LDT2
Mobilization	Vendor	0.00	8.80	HHDT,MHDT
Mobilization	Hauling	0.00	20.0	HHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Mobilization	Onsite truck	—	—	HHDT
High Flow Bypass - Clearing and Grubbing	—	—	—	—
High Flow Bypass - Clearing and Grubbing	Worker	15.0	14.3	LDA,LDT1,LDT2
High Flow Bypass - Clearing and Grubbing	Vendor	0.00	8.80	HHDT,MHDT
High Flow Bypass - Clearing and Grubbing	Hauling	42.8	20.0	HHDT
High Flow Bypass - Clearing and Grubbing	Onsite truck	—	—	HHDT
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	—	—	—	—
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Worker	15.0	14.3	LDA,LDT1,LDT2
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Vendor	0.00	8.80	HHDT,MHDT
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Hauling	83.6	20.0	HHDT
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Onsite truck	—	—	HHDT
High Flow Bypass - Culvert Installation	—	—	—	—
High Flow Bypass - Culvert Installation	Worker	15.0	14.3	LDA,LDT1,LDT2
High Flow Bypass - Culvert Installation	Vendor	0.00	8.80	HHDT,MHDT
High Flow Bypass - Culvert Installation	Hauling	0.00	20.0	HHDT
High Flow Bypass - Culvert Installation	Onsite truck	—	—	HHDT
Channel Slope Flattening - Clearing and Grubbing	—	—	—	—

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Channel Slope Flattening - Clearing and Grubbing	Worker	15.0	14.3	LDA,LDT1,LDT2
Channel Slope Flattening - Clearing and Grubbing	Vendor	0.00	8.80	HHDT,MHDT
Channel Slope Flattening - Clearing and Grubbing	Hauling	42.8	20.0	HHDT
Channel Slope Flattening - Clearing and Grubbing	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Clearing and Grubbing	—	—	—	—
MPC Levee and Raley Crossing - Clearing and Grubbing	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Clearing and Grubbing	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Clearing and Grubbing	Hauling	42.8	20.0	HHDT
MPC Levee and Raley Crossing - Clearing and Grubbing	Onsite truck	—	—	HHDT
Demobilization	—	—	—	—
Demobilization	Worker	15.0	14.3	LDA,LDT1,LDT2
Demobilization	Vendor	0.00	8.80	HHDT,MHDT
Demobilization	Hauling	0.00	20.0	HHDT
Demobilization	Onsite truck	—	—	HHDT
Channel Slope Flattening - Access Road	—	—	—	—
Channel Slope Flattening - Access Road	Worker	15.0	14.3	LDA,LDT1,LDT2
Channel Slope Flattening - Access Road	Vendor	0.00	8.80	HHDT,MHDT
Channel Slope Flattening - Access Road	Hauling	51.1	20.0	HHDT
Channel Slope Flattening - Access Road	Onsite truck	—	—	HHDT
Channel Slope Flattening - Excavation	—	—	—	—

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Channel Slope Flattening - Excavation	Worker	15.0	14.3	LDA,LDT1,LDT2
Channel Slope Flattening - Excavation	Vendor	0.00	8.80	HHDT,MHDT
Channel Slope Flattening - Excavation	Hauling	260	20.0	HHDT
Channel Slope Flattening - Excavation	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Channel Excavation	—	—	—	—
MPC Levee and Raley Crossing - Channel Excavation	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Channel Excavation	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Channel Excavation	Hauling	167	20.0	HHDT
MPC Levee and Raley Crossing - Channel Excavation	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Levee Construction	—	—	—	—
MPC Levee and Raley Crossing - Levee Construction	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Levee Construction	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Levee Construction	Hauling	43.5	20.0	HHDT
MPC Levee and Raley Crossing - Levee Construction	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Surfacing	—	—	—	—
MPC Levee and Raley Crossing - Surfacing	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Surfacing	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Surfacing	Hauling	36.7	20.0	HHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
MPC Levee and Raley Crossing - Surfacing	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Box Culvert Excavation	—	—	—	—
MPC Levee and Raley Crossing - Box Culvert Excavation	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Box Culvert Excavation	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Box Culvert Excavation	Hauling	80.6	20.0	HHDT
MPC Levee and Raley Crossing - Box Culvert Excavation	Onsite truck	—	—	HHDT
High Flow Bypass - Culvert Backfill	—	—	—	—
High Flow Bypass - Culvert Backfill	Worker	15.0	14.3	LDA,LDT1,LDT2
High Flow Bypass - Culvert Backfill	Vendor	0.00	8.80	HHDT,MHDT
High Flow Bypass - Culvert Backfill	Hauling	34.7	20.0	HHDT
High Flow Bypass - Culvert Backfill	Onsite truck	—	—	HHDT
High Flow Bypass - Riprap Installation	—	—	—	—
High Flow Bypass - Riprap Installation	Worker	15.0	14.3	LDA,LDT1,LDT2
High Flow Bypass - Riprap Installation	Vendor	0.00	8.80	HHDT,MHDT
High Flow Bypass - Riprap Installation	Hauling	53.0	20.0	HHDT
High Flow Bypass - Riprap Installation	Onsite truck	—	—	HHDT
High Flow Bypass - Plug Removal	—	—	—	—
High Flow Bypass - Plug Removal	Worker	15.0	14.3	LDA,LDT1,LDT2
High Flow Bypass - Plug Removal	Vendor	0.00	8.80	HHDT,MHDT
High Flow Bypass - Plug Removal	Hauling	25.0	20.0	HHDT
High Flow Bypass - Plug Removal	Onsite truck	—	—	HHDT
Channel Slope Flattening - Riprap Installation	—	—	—	—

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Channel Slope Flattening - Riprap Installation	Worker	15.0	14.3	LDA,LDT1,LDT2
Channel Slope Flattening - Riprap Installation	Vendor	0.00	8.80	HHDT,MHDT
Channel Slope Flattening - Riprap Installation	Hauling	30.0	20.0	HHDT
Channel Slope Flattening - Riprap Installation	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Box Culvert Installation	—	—	—	—
MPC Levee and Raley Crossing - Box Culvert Installation	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Box Culvert Installation	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Box Culvert Installation	Hauling	0.00	20.0	HHDT
MPC Levee and Raley Crossing - Box Culvert Installation	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Backfill	—	—	—	—
MPC Levee and Raley Crossing - Backfill	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Backfill	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Backfill	Hauling	89.5	20.0	HHDT
MPC Levee and Raley Crossing - Backfill	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Riprap Installation	—	—	—	—
MPC Levee and Raley Crossing - Riprap Installation	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Riprap Installation	Vendor	0.00	8.80	HHDT,MHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
MPC Levee and Raley Crossing - Riprap Installation	Hauling	67.0	20.0	HHDT
MPC Levee and Raley Crossing - Riprap Installation	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Turf Establishment	—	—	—	—
MPC Levee and Raley Crossing - Turf Establishment	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Turf Establishment	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Turf Establishment	Hauling	1.00	20.0	HHDT
MPC Levee and Raley Crossing - Turf Establishment	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Road Paving/Stiping	—	—	—	—
MPC Levee and Raley Crossing - Road Paving/Stiping	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Road Paving/Stiping	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Road Paving/Stiping	Hauling	50.0	20.0	HHDT
MPC Levee and Raley Crossing - Road Paving/Stiping	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Mobilization	—	—	—	—
Mobilization	Worker	15.0	14.3	LDA,LDT1,LDT2
Mobilization	Vendor	0.00	8.80	HHDT,MHDT
Mobilization	Hauling	0.00	20.0	HHDT
Mobilization	Onsite truck	—	—	HHDT
High Flow Bypass - Clearing and Grubbing	—	—	—	—

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
High Flow Bypass - Clearing and Grubbing	Worker	15.0	14.3	LDA,LDT1,LDT2
High Flow Bypass - Clearing and Grubbing	Vendor	0.00	8.80	HHDT,MHDT
High Flow Bypass - Clearing and Grubbing	Hauling	42.8	20.0	HHDT
High Flow Bypass - Clearing and Grubbing	Onsite truck	—	—	HHDT
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	—	—	—	—
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Worker	15.0	14.3	LDA,LDT1,LDT2
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Vendor	0.00	8.80	HHDT,MHDT
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Hauling	83.6	20.0	HHDT
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	Onsite truck	—	—	HHDT
High Flow Bypass - Culvert Installation	—	—	—	—
High Flow Bypass - Culvert Installation	Worker	15.0	14.3	LDA,LDT1,LDT2
High Flow Bypass - Culvert Installation	Vendor	0.00	8.80	HHDT,MHDT
High Flow Bypass - Culvert Installation	Hauling	0.00	20.0	HHDT
High Flow Bypass - Culvert Installation	Onsite truck	—	—	HHDT
Channel Slope Flattening - Clearing and Grubbing	—	—	—	—
Channel Slope Flattening - Clearing and Grubbing	Worker	15.0	14.3	LDA,LDT1,LDT2

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Channel Slope Flattening - Clearing and Grubbing	Vendor	0.00	8.80	HHDT,MHDT
Channel Slope Flattening - Clearing and Grubbing	Hauling	42.8	20.0	HHDT
Channel Slope Flattening - Clearing and Grubbing	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Clearing and Grubbing	—	—	—	—
MPC Levee and Raley Crossing - Clearing and Grubbing	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Clearing and Grubbing	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Clearing and Grubbing	Hauling	42.8	20.0	HHDT
MPC Levee and Raley Crossing - Clearing and Grubbing	Onsite truck	—	—	HHDT
Demobilization	—	—	—	—
Demobilization	Worker	15.0	14.3	LDA,LDT1,LDT2
Demobilization	Vendor	0.00	8.80	HHDT,MHDT
Demobilization	Hauling	0.00	20.0	HHDT
Demobilization	Onsite truck	—	—	HHDT
Channel Slope Flattening - Access Road	—	—	—	—
Channel Slope Flattening - Access Road	Worker	15.0	14.3	LDA,LDT1,LDT2
Channel Slope Flattening - Access Road	Vendor	0.00	8.80	HHDT,MHDT
Channel Slope Flattening - Access Road	Hauling	51.1	20.0	HHDT
Channel Slope Flattening - Access Road	Onsite truck	—	—	HHDT
Channel Slope Flattening - Excavation	—	—	—	—
Channel Slope Flattening - Excavation	Worker	15.0	14.3	LDA,LDT1,LDT2

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Channel Slope Flattening - Excavation	Vendor	0.00	8.80	HHDT,MHDT
Channel Slope Flattening - Excavation	Hauling	260	20.0	HHDT
Channel Slope Flattening - Excavation	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Channel Excavation	—	—	—	—
MPC Levee and Raley Crossing - Channel Excavation	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Channel Excavation	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Channel Excavation	Hauling	167	20.0	HHDT
MPC Levee and Raley Crossing - Channel Excavation	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Levee Construction	—	—	—	—
MPC Levee and Raley Crossing - Levee Construction	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Levee Construction	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Levee Construction	Hauling	43.5	20.0	HHDT
MPC Levee and Raley Crossing - Levee Construction	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Surfacing	—	—	—	—
MPC Levee and Raley Crossing - Surfacing	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Surfacing	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Surfacing	Hauling	36.7	20.0	HHDT
MPC Levee and Raley Crossing - Surfacing	Onsite truck	—	—	HHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
MPC Levee and Raley Crossing - Box Culvert Excavation	—	—	—	—
MPC Levee and Raley Crossing - Box Culvert Excavation	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Box Culvert Excavation	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Box Culvert Excavation	Hauling	80.6	20.0	HHDT
MPC Levee and Raley Crossing - Box Culvert Excavation	Onsite truck	—	—	HHDT
High Flow Bypass - Culvert Backfill	—	—	—	—
High Flow Bypass - Culvert Backfill	Worker	15.0	14.3	LDA,LDT1,LDT2
High Flow Bypass - Culvert Backfill	Vendor	0.00	8.80	HHDT,MHDT
High Flow Bypass - Culvert Backfill	Hauling	34.7	20.0	HHDT
High Flow Bypass - Culvert Backfill	Onsite truck	—	—	HHDT
High Flow Bypass - Riprap Installation	—	—	—	—
High Flow Bypass - Riprap Installation	Worker	15.0	14.3	LDA,LDT1,LDT2
High Flow Bypass - Riprap Installation	Vendor	0.00	8.80	HHDT,MHDT
High Flow Bypass - Riprap Installation	Hauling	53.0	20.0	HHDT
High Flow Bypass - Riprap Installation	Onsite truck	—	—	HHDT
High Flow Bypass - Plug Removal	—	—	—	—
High Flow Bypass - Plug Removal	Worker	15.0	14.3	LDA,LDT1,LDT2
High Flow Bypass - Plug Removal	Vendor	0.00	8.80	HHDT,MHDT
High Flow Bypass - Plug Removal	Hauling	25.0	20.0	HHDT
High Flow Bypass - Plug Removal	Onsite truck	—	—	HHDT
Channel Slope Flattening - Riprap Installation	—	—	—	—
Channel Slope Flattening - Riprap Installation	Worker	15.0	14.3	LDA,LDT1,LDT2

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Channel Slope Flattening - Riprap Installation	Vendor	0.00	8.80	HHDT,MHDT
Channel Slope Flattening - Riprap Installation	Hauling	30.0	20.0	HHDT
Channel Slope Flattening - Riprap Installation	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Box Culvert Installation	—	—	—	—
MPC Levee and Raley Crossing - Box Culvert Installation	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Box Culvert Installation	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Box Culvert Installation	Hauling	0.00	20.0	HHDT
MPC Levee and Raley Crossing - Box Culvert Installation	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Backfill	—	—	—	—
MPC Levee and Raley Crossing - Backfill	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Backfill	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Backfill	Hauling	89.5	20.0	HHDT
MPC Levee and Raley Crossing - Backfill	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Riprap Installation	—	—	—	—
MPC Levee and Raley Crossing - Riprap Installation	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Riprap Installation	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Riprap Installation	Hauling	67.0	20.0	HHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
MPC Levee and Raley Crossing - Riprap Installation	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Turf Establishment	—	—	—	—
MPC Levee and Raley Crossing - Turf Establishment	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Turf Establishment	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Turf Establishment	Hauling	1.00	20.0	HHDT
MPC Levee and Raley Crossing - Turf Establishment	Onsite truck	—	—	HHDT
MPC Levee and Raley Crossing - Road Paving/Stiping	—	—	—	—
MPC Levee and Raley Crossing - Road Paving/Stiping	Worker	15.0	14.3	LDA,LDT1,LDT2
MPC Levee and Raley Crossing - Road Paving/Stiping	Vendor	0.00	8.80	HHDT,MHDT
MPC Levee and Raley Crossing - Road Paving/Stiping	Hauling	50.0	20.0	HHDT
MPC Levee and Raley Crossing - Road Paving/Stiping	Onsite truck	—	—	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 (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Mobilization	0.00	0.00	4.00	0.00	—
High Flow Bypass - Clearing and Grubbing	0.00	6,500	4.00	0.00	—
Channel Slope Flattening - Clearing and Grubbing	0.00	6,500	4.00	0.00	—
MPC Levee and Raley Crossing - Clearing and Grubbing	0.00	6,500	4.00	0.00	—
Demobilization	0.00	0.00	4.00	0.00	—
High Flow Bypass - Culvert Installation - Channel/Culvert Excavation	5,350	0.00	4.00	0.00	—
Channel Slope Flattening - Access Road	3,620	0.00	4.00	0.00	—
Channel Slope Flattening - Excavation	0.00	56,163	4.00	0.00	—
MPC Levee and Raley Crossing - Channel Excavation	0.00	5,350	4.00	0.00	—
MPC Levee and Raley Crossing - Levee Construction	7,655	0.00	4.00	0.00	—
MPC Levee and Raley Crossing - Surfacing	1,103	0.00	4.00	0.00	—
MPC Levee and Raley Crossing - Box Culvert Excavation	0.00	5,800	4.00	0.00	—
High Flow Bypass - Culvert Installation	0.00	0.00	4.00	0.00	—
High Flow Bypass - Culvert Backfill	830	0.00	4.00	0.00	—
High Flow Bypass - Riprap Installation	7,500	0.00	4.00	0.00	—

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
High Flow Bypass - Plug Removal	200	0.00	4.00	0.00	—
Channel Slope Flattening - Riprap Installation	600	0.00	4.00	0.00	—
MPC Levee and Raley Crossing - Box Culvert Installation	0.00	0.00	4.00	0.00	—
MPC Levee and Raley Crossing - Backfill	13,600	0.00	4.00	0.00	—
MPC Levee and Raley Crossing - Riprap Installation	15,000	0.00	4.00	0.00	—
MPC Levee and Raley Crossing - Turf Establishment	1.00	0.00	4.00	0.00	—
MPC Levee and Raley Crossing - Road Paving/Stiping	500	0.00	4.00	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
User Defined Linear	4.00	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	0.00	375	0.01	< 0.005

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	21.4	annual days of extreme heat
Extreme Precipitation	5.75	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	1	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	1	1	1	2
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	57.0
AQ-PM	33.4
AQ-DPM	33.7
Drinking Water	16.8
Lead Risk Housing	43.2
Pesticides	3.66
Toxic Releases	22.7
Traffic	16.0
Effect Indicators	—
CleanUp Sites	61.4
Groundwater	2.11
Haz Waste Facilities/Generators	84.2
Impaired Water Bodies	23.9
Solid Waste	0.00
Sensitive Population	—
Asthma	97.5
Cardio-vascular	97.9
Low Birth Weights	32.3
Socioeconomic Factor Indicators	—
Education	59.6
Housing	62.4
Linguistic	53.9
Poverty	59.1
Unemployment	—

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	44.39881945
Employed	43.98819453
Median HI	42.46118311
Education	—
Bachelor's or higher	27.48620557
High school enrollment	26.06185038
Preschool enrollment	50.64801745
Transportation	—
Auto Access	83.51084306
Active commuting	20.14628513
Social	—
2-parent households	49.50596689
Voting	42.91030412
Neighborhood	—
Alcohol availability	88.57949442
Park access	33.27345053
Retail density	43.29526498
Supermarket access	4.940331066
Tree canopy	75.20852047
Housing	—
Homeownership	79.96920313
Housing habitability	58.20608238
Low-inc homeowner severe housing cost burden	14.01257539
Low-inc renter severe housing cost burden	61.46541768
Uncrowded housing	36.78942641
Health Outcomes	—
Insured adults	41.30630053
Arthritis	45.8
Asthma ER Admissions	9.6

Indicator	Result for Project Census Tract
High Blood Pressure	41.6
Cancer (excluding skin)	57.8
Asthma	21.6
Coronary Heart Disease	57.7
Chronic Obstructive Pulmonary Disease	29.1
Diagnosed Diabetes	54.0
Life Expectancy at Birth	19.1
Cognitively Disabled	35.0
Physically Disabled	52.4
Heart Attack ER Admissions	3.7
Mental Health Not Good	31.8
Chronic Kidney Disease	64.9
Obesity	34.9
Pedestrian Injuries	19.6
Physical Health Not Good	41.5
Stroke	45.2
Health Risk Behaviors	—
Binge Drinking	30.9
Current Smoker	14.6
No Leisure Time for Physical Activity	46.8
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	22.0
Elderly	61.3
English Speaking	55.0
Foreign-born	42.4
Outdoor Workers	30.3
Climate Change Adaptive Capacity	—
Impervious Surface Cover	80.1
Traffic Density	14.7
Traffic Access	23.0
Other Indices	—

Indicator	Result for Project Census Tract
Hardship	65.4
Other Decision Support	—
2016 Voting	30.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	51.0
Healthy Places Index Score for Project Location (b)	46.0
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	Phasing provided by USACE.
Construction: Off-Road Equipment	Equipment list provided by USACE.
Construction: Dust From Material Movement	Hauling quanitites provided by USACE.
Construction: Trips and VMT	Number of workers is estimated. Defaults used for haul trip length.

American River C3B Site 3-1 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	American River C3B Site 3-1
Construction Start Date	11/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	37.8
Location	38.580672767397914, -121.42531743920867
County	Sacramento
City	Sacramento
Air District	Sacramento Metropolitan AQMD
Air Basin	Sacramento Valley
TAZ	514
EDFZ	13
Electric Utility	Sacramento Municipal Utility District
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
User Defined Linear	1.00	Mile	30.0	0.00	—	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	17.3	7.86	207	114	0.68	3.82	766	770	3.66	88.3	92.0	—	107,532	107,532	9.48	15.8	216	112,697
Mit.	12.7	3.58	173	131	0.68	2.05	754	756	2.04	82.6	84.5	—	107,942	107,942	9.50	15.8	216	113,109
% Reduced	27%	54%	17%	-16%	-1%	46%	2%	2%	44%	7%	8%	—	> -0.5%	> -0.5%	> -0.5%	> -0.5%	—	> -0.5%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	21.8	12.1	240	150	0.71	5.53	674	679	5.21	85.9	91.2	—	105,712	105,712	8.65	13.6	4.80	109,979
Mit.	12.0	4.13	164	174	0.71	1.94	650	652	1.94	74.5	76.4	—	106,522	106,522	8.69	13.6	4.80	110,791
% Reduced	45%	66%	32%	-16%	-1%	65%	3%	4%	63%	13%	16%	—	-1%	-1%	> -0.5%	> -0.5%	—	-1%

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	Un/Mit.
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.71	3.45	94.3	49.9	0.29	1.76	314	316	1.68	36.8	38.5	—	45,472	45,472	3.96	6.51	38.3	47,551
Mit.	5.29	1.48	75.7	53.0	0.29	0.84	308	309	0.84	33.9	34.8	—	45,672	45,672	3.97	6.52	38.3	47,751
% Reduced	31%	57%	20%	-6%	-1%	52%	2%	2%	50%	8%	10%	—	> -0.5%	> -0.5%	> -0.5%	> -0.5%	—	> -0.5%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.41	0.63	17.2	9.11	0.05	0.32	57.3	57.6	0.31	6.72	7.02	—	7,528	7,528	0.66	1.08	6.35	7,873
Mit.	0.96	0.27	13.8	9.67	0.05	0.15	56.2	56.4	0.15	6.20	6.35	—	7,561	7,561	0.66	1.08	6.35	7,906
% Reduced	31%	57%	20%	-6%	-1%	52%	2%	2%	50%	8%	10%	—	> -0.5%	> -0.5%	> -0.5%	> -0.5%	—	> -0.5%

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	17.3	7.86	207	114	0.68	3.82	766	770	3.66	88.3	92.0	—	107,532	107,532	9.48	15.8	216	112,697
2026	0.08	0.08	0.04	0.83	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	157	157	< 0.005	0.01	0.56	159
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.29	0.81	32.5	14.9	0.19	0.38	111	111	0.37	11.7	12.1	—	15,946	15,946	1.44	2.46	0.84	16,716
2025	21.8	12.1	240	150	0.71	5.53	674	679	5.21	85.9	91.2	—	105,712	105,712	8.65	13.6	4.80	109,979
2026	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.01	< 0.005	0.18	0.08	< 0.005	< 0.005	0.61	0.61	< 0.005	0.06	0.07	—	87.4	87.4	0.01	0.01	0.08	91.7

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
2025	7.71	3.45	94.3	49.9	0.29	1.76	314	316	1.68	36.8	38.5	—	45,472	45,472	3.96	6.51	38.3	47,551
2026	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.48	5.48	< 0.005	< 0.005	0.01	5.57
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	14.5	14.5	< 0.005	< 0.005	0.01	15.2
2025	1.41	0.63	17.2	9.11	0.05	0.32	57.3	57.6	0.31	6.72	7.02	—	7,528	7,528	0.66	1.08	6.35	7,873
2026	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.91	0.91	< 0.005	< 0.005	< 0.005	0.92

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	12.7	3.58	173	131	0.68	2.05	754	756	2.04	82.6	84.5	—	107,942	107,942	9.50	15.8	216	113,109
2026	0.08	0.08	0.04	0.83	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	157	157	< 0.005	0.01	0.56	159
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.00	0.57	30.8	15.0	0.19	0.28	111	111	0.28	11.7	12.0	—	15,946	15,946	1.44	2.46	0.84	16,716
2025	12.0	4.13	164	174	0.71	1.94	650	652	1.94	74.5	76.4	—	106,522	106,522	8.69	13.6	4.80	110,791
2026	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.01	< 0.005	0.17	0.08	< 0.005	< 0.005	0.61	0.61	< 0.005	0.06	0.07	—	87.4	87.4	0.01	0.01	0.08	91.7
2025	5.29	1.48	75.7	53.0	0.29	0.84	308	309	0.84	33.9	34.8	—	45,672	45,672	3.97	6.52	38.3	47,751
2026	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.48	5.48	< 0.005	< 0.005	0.01	5.57
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	14.5	14.5	< 0.005	< 0.005	0.01	15.2
2025	0.96	0.27	13.8	9.67	0.05	0.15	56.2	56.4	0.15	6.20	6.35	—	7,561	7,561	0.66	1.08	6.35	7,906
2026	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.91	0.91	< 0.005	< 0.005	< 0.005	0.92

3. Construction Emissions Details

3.1. Linear, Grubbing & Land Clearing (2024) - 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 Equipmen	0.36	0.30	2.81	4.03	0.01	0.11	—	0.11	0.10	—	0.10	—	594	594	0.02	< 0.005	—	596
Dust From Material Movemen	—	—	—	—	—	—	0.09	0.09	—	0.01	0.01	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.26	3.26	< 0.005	< 0.005	—	3.27
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.54	0.54	< 0.005	< 0.005	—	0.54

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.07	0.75	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	145	145	0.01	0.01	0.02	147
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	1.85	0.43	29.6	10.1	0.18	0.27	111	111	0.27	11.7	11.9	—	15,207	15,207	1.41	2.45	0.83	15,972
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.83
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	0.01	< 0.005	0.16	0.06	< 0.005	< 0.005	0.61	0.61	< 0.005	0.06	0.07	—	83.3	83.3	0.01	0.01	0.08	87.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.14
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	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	13.8	13.8	< 0.005	< 0.005	0.01	14.5

3.2. Linear, Grubbing & Land Clearing (2024) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.07	0.07	1.11	4.15	0.01	0.01	—	0.01	0.01	—	0.01	—	594	594	0.02	< 0.005	—	596
Dust From Material Movemen	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.26	3.26	< 0.005	< 0.005	—	3.27
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.54	0.54	< 0.005	< 0.005	—	0.54
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	0.08	0.07	0.07	0.75	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	145	145	0.01	0.01	0.02	147
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	1.85	0.43	29.6	10.1	0.18	0.27	111	111	0.27	11.7	11.9	—	15,207	15,207	1.41	2.45	0.83	15,972
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.83
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	0.01	< 0.005	0.16	0.06	< 0.005	< 0.005	0.61	0.61	< 0.005	0.06	0.07	—	83.3	83.3	0.01	0.01	0.08	87.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.14
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	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	13.8	13.8	< 0.005	< 0.005	0.01	14.5

3.3. Linear, Grading & Excavation (2025) - 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 Equipmen	5.51	4.63	43.1	44.1	0.07	2.01	—	2.01	1.85	—	1.85	—	7,273	7,273	0.30	0.06	—	7,298
Dust From Material Movemen	—	—	—	—	—	—	19.7	19.7	—	9.46	9.46	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.38	0.32	2.95	3.02	< 0.005	0.14	—	0.14	0.13	—	0.13	—	498	498	0.02	< 0.005	—	500
Dust From Material Movemen	—	—	—	—	—	—	1.35	1.35	—	0.65	0.65	—	—	—	—	—	—	—
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 Equipmen	0.07	0.06	0.54	0.55	< 0.005	0.03	—	0.03	0.02	—	0.02	—	82.5	82.5	< 0.005	< 0.005	—	82.8
Dust From Material Movemen	—	—	—	—	—	—	0.25	0.25	—	0.12	0.12	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	5.12	1.02	75.1	28.6	0.27	0.78	321	321	0.78	33.8	34.6	—	43,156	43,156	4.08	6.83	91.4	45,385
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.9	60.9	< 0.005	< 0.005	0.11	61.8
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	0.35	0.07	5.45	1.97	0.02	0.05	22.0	22.0	0.05	2.31	2.37	—	2,956	2,956	0.28	0.47	2.71	3,105
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.1	10.1	< 0.005	< 0.005	0.02	10.2

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	0.06	0.01	0.99	0.36	< 0.005	0.01	4.01	4.02	0.01	0.42	0.43	—	489	489	0.05	0.08	0.45	514

3.4. Linear, Grading & Excavation (2025) - 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 Equipmen	0.76	0.76	6.21	45.6	0.07	0.14	—	0.14	0.14	—	0.14	—	7,673	7,673	0.31	0.06	—	7,699
Dust From Material Movemen	—	—	—	—	—	—	7.70	7.70	—	3.69	3.69	—	—	—	—	—	—	—
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 Equipmen	0.05	0.05	0.43	3.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	526	526	0.02	< 0.005	—	527
Dust From Material Movemen	—	—	—	—	—	—	0.53	0.53	—	0.25	0.25	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.08	0.57	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	87.0	87.0	< 0.005	< 0.005	—	87.3

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	5.12	1.02	75.1	28.6	0.27	0.78	321	321	0.78	33.8	34.6	—	43,156	43,156	4.08	6.83	91.4	45,385
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.9	60.9	< 0.005	< 0.005	0.11	61.8
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	0.35	0.07	5.45	1.97	0.02	0.05	22.0	22.0	0.05	2.31	2.37	—	2,956	2,956	0.28	0.47	2.71	3,105
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.1	10.1	< 0.005	< 0.005	0.02	10.2
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	0.06	0.01	0.99	0.36	< 0.005	0.01	4.01	4.02	0.01	0.42	0.43	—	489	489	0.05	0.08	0.45	514

3.5. Linear, Grading & Excavation (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	5.51	4.63	43.1	44.1	0.07	2.01	—	2.01	1.85	—	1.85	—	7,273	7,273	0.30	0.06	—	7,298
Dust From Material Movemen	—	—	—	—	—	—	19.7	19.7	—	9.44	9.44	—	—	—	—	—	—	—
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 Equipmen	0.88	0.74	6.84	7.01	0.01	0.32	—	0.32	0.29	—	0.29	—	1,156	1,156	0.05	0.01	—	1,160
Dust From Material Movemen	—	—	—	—	—	—	3.12	3.12	—	1.50	1.50	—	—	—	—	—	—	—
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 Equipmen	0.16	0.13	1.25	1.28	< 0.005	0.06	—	0.06	0.05	—	0.05	—	191	191	0.01	< 0.005	—	192
Dust From Material Movemen	—	—	—	—	—	—	0.57	0.57	—	0.27	0.27	—	—	—	—	—	—	—
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	0.45	0.44	0.09	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	21.6	21.6	0.02	0.01	0.00	25.4
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	11.0	1.95	162	60.0	0.60	1.79	735	737	1.79	77.6	79.4	—	97,865	97,865	9.03	15.5	209	102,917

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	3.50	3.50	< 0.005	< 0.005	0.00	4.11
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	1.75	0.31	27.3	9.54	0.10	0.28	117	117	0.28	12.3	12.6	—	15,551	15,551	1.44	2.46	14.4	16,335
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.58	0.58	< 0.005	< 0.005	0.00	0.68
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	0.32	0.06	4.98	1.74	0.02	0.05	21.3	21.4	0.05	2.25	2.30	—	2,575	2,575	0.24	0.41	2.39	2,704

3.6. Linear, Grading & Excavation (2025) - 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 Equipmen	0.76	0.76	6.21	45.6	0.07	0.14	—	0.14	0.14	—	0.14	—	7,673	7,673	0.31	0.06	—	7,699
Dust From Material Movemen	—	—	—	—	—	—	7.66	7.66	—	3.68	3.68	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	0.12	0.12	0.99	7.25	0.01	0.02	—	0.02	0.02	—	0.02	—	1,219	1,219	0.05	0.01	—	1,223
Dust From Material Movemen	—	—	—	—	—	—	1.22	1.22	—	0.59	0.59	—	—	—	—	—	—	—
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 Equipmen	0.02	0.02	0.18	1.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	202	202	0.01	< 0.005	—	203
Dust From Material Movemen	—	—	—	—	—	—	0.22	0.22	—	0.11	0.11	—	—	—	—	—	—	—
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	0.45	0.44	0.09	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	21.6	21.6	0.02	0.01	0.00	25.4
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	11.0	1.95	162	60.0	0.60	1.79	735	737	1.79	77.6	79.4	—	97,865	97,865	9.03	15.5	209	102,917
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	3.50	3.50	< 0.005	< 0.005	0.00	4.11
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	1.75	0.31	27.3	9.54	0.10	0.28	117	117	0.28	12.3	12.6	—	15,551	15,551	1.44	2.46	14.4	16,335
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.58	0.58	< 0.005	< 0.005	0.00	0.68
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	0.32	0.06	4.98	1.74	0.02	0.05	21.3	21.4	0.05	2.25	2.30	—	2,575	2,575	0.24	0.41	2.39	2,704

3.7. Linear, Grading & Excavation (2025) - 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 Equipmen	5.52	4.64	43.1	44.2	0.07	2.01	—	2.01	1.85	—	1.85	—	7,284	7,284	0.30	0.06	—	7,309
Dust From Material Movemen	—	—	—	—	—	—	19.7	19.7	—	9.45	9.45	—	—	—	—	—	—	—
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 Equipmen	0.32	0.27	2.48	2.54	< 0.005	0.12	—	0.12	0.11	—	0.11	—	419	419	0.02	< 0.005	—	421
Dust From Material Movemen	—	—	—	—	—	—	1.13	1.13	—	0.54	0.54	—	—	—	—	—	—	—
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 Equipmen	0.06	0.05	0.45	0.46	< 0.005	0.02	—	0.02	0.02	—	0.02	—	69.4	69.4	< 0.005	< 0.005	—	69.6
Dust From Material Movemen	—	—	—	—	—	—	0.21	0.21	—	0.10	0.10	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	11.2	1.97	164	60.8	0.61	1.81	746	747	1.81	78.7	80.5	—	99,273	99,273	9.16	15.7	213	104,397
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.24	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	51.1	51.1	< 0.005	< 0.005	0.09	51.9
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	0.64	0.11	10.0	3.50	0.03	0.10	42.9	43.0	0.10	4.52	4.63	—	5,711	5,711	0.53	0.90	5.30	5,999
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.47	8.47	< 0.005	< 0.005	0.02	8.60
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	0.12	0.02	1.83	0.64	0.01	0.02	7.82	7.84	0.02	0.83	0.84	—	946	946	0.09	0.15	0.88	993

3.8. Linear, Grading & Excavation (2025) - 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 Equipmen	0.76	0.76	6.22	45.8	0.07	0.14	—	0.14	0.14	—	0.14	—	7,694	7,694	0.31	0.06	—	7,721
Dust From Material Movemen	—	—	—	—	—	—	7.67	7.67	—	3.68	3.68	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.04	0.04	0.36	2.63	< 0.005	0.01	—	0.01	0.01	—	0.01	—	443	443	0.02	< 0.005	—	444
Dust From Material Movemen	—	—	—	—	—	—	0.44	0.44	—	0.21	0.21	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.07	0.48	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	73.3	73.3	< 0.005	< 0.005	—	73.5
Dust From Material Movemen	—	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	11.2	1.97	164	60.8	0.61	1.81	746	747	1.81	78.7	80.5	—	99,273	99,273	9.16	15.7	213	104,397
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	0.03	0.03	0.02	0.24	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	51.1	51.1	< 0.005	< 0.005	0.09	51.9
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	0.64	0.11	10.0	3.50	0.03	0.10	42.9	43.0	0.10	4.52	4.63	—	5,711	5,711	0.53	0.90	5.30	5,999
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.47	8.47	< 0.005	< 0.005	0.02	8.60
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	0.12	0.02	1.83	0.64	0.01	0.02	7.82	7.84	0.02	0.83	0.84	—	946	946	0.09	0.15	0.88	993

3.9. Linear, Grading & Excavation (2025) - 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 Equipmen	5.87	4.94	46.4	48.7	0.08	2.04	—	2.04	1.88	—	1.88	—	8,743	8,743	0.35	0.07	—	8,773
Dust From Material Movemen	—	—	—	—	—	—	18.9	18.9	—	9.37	9.37	—	—	—	—	—	—	—
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 Equipmen	0.50	0.42	3.94	4.14	0.01	0.17	—	0.17	0.16	—	0.16	—	743	743	0.03	0.01	—	745
Dust From Material Movemen	—	—	—	—	—	—	1.61	1.61	—	0.80	0.80	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.09	0.08	0.72	0.75	< 0.005	0.03	—	0.03	0.03	—	0.03	—	123	123	< 0.005	< 0.005	—	123
Dust From Material Movemen	—	—	—	—	—	—	0.29	0.29	—	0.15	0.15	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	10.9	1.93	161	59.6	0.60	1.77	731	732	1.77	77.1	78.9	—	97,266	97,266	8.98	15.4	208	102,287
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.36	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	75.5	75.5	< 0.005	< 0.005	0.14	76.6
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	0.93	0.16	14.5	5.07	0.05	0.15	62.0	62.2	0.15	6.54	6.69	—	8,261	8,261	0.76	1.31	7.66	8,677
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.5	12.5	< 0.005	< 0.005	0.02	12.7
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	0.17	0.03	2.65	0.92	0.01	0.03	11.3	11.3	0.03	1.19	1.22	—	1,368	1,368	0.13	0.22	1.27	1,437

3.10. Linear, Grading & Excavation (2025) - 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 Equipmen	1.21	1.16	12.1	53.3	0.08	0.27	—	0.27	0.26	—	0.26	—	9,142	9,142	0.37	0.07	—	9,174
Dust From Material Movemen	—	—	—	—	—	—	7.38	7.38	—	3.65	3.65	—	—	—	—	—	—	—
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 Equipmen	0.10	0.10	1.02	4.53	0.01	0.02	—	0.02	0.02	—	0.02	—	776	776	0.03	0.01	—	779
Dust From Material Movemen	—	—	—	—	—	—	0.63	0.63	—	0.31	0.31	—	—	—	—	—	—	—
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 Equipmen	0.02	0.02	0.19	0.83	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	129	129	0.01	< 0.005	—	129
Dust From Material Movemen	—	—	—	—	—	—	0.11	0.11	—	0.06	0.06	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	10.9	1.93	161	59.6	0.60	1.77	731	732	1.77	77.1	78.9	—	97,266	97,266	8.98	15.4	208	102,287
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.36	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	75.5	75.5	< 0.005	< 0.005	0.14	76.6
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	0.93	0.16	14.5	5.07	0.05	0.15	62.0	62.2	0.15	6.54	6.69	—	8,261	8,261	0.76	1.31	7.66	8,677
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.5	12.5	< 0.005	< 0.005	0.02	12.7
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	0.17	0.03	2.65	0.92	0.01	0.03	11.3	11.3	0.03	1.19	1.22	—	1,368	1,368	0.13	0.22	1.27	1,437

3.11. Linear, Grading & Excavation (2025) - 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 Equipmen	6.83	5.74	49.0	53.6	0.13	2.23	—	2.23	2.05	—	2.05	—	13,576	13,576	0.55	0.11	—	13,623
Dust From Material Movemen	—	—	—	—	—	—	19.6	19.6	—	9.43	9.43	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.04	0.03	0.27	0.29	< 0.005	0.01	—	0.01	0.01	—	0.01	—	74.4	74.4	< 0.005	< 0.005	—	74.6
Dust From Material Movemen	—	—	—	—	—	—	0.11	0.11	—	0.05	0.05	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.3	12.3	< 0.005	< 0.005	—	12.4
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	6.01	1.06	88.3	32.8	0.33	0.98	402	403	0.98	42.4	43.4	—	53,473	53,473	4.94	8.46	114	56,234
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
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	0.03	0.01	0.51	0.18	< 0.005	0.01	2.20	2.20	0.01	0.23	0.24	—	293	293	0.03	0.05	0.27	308
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
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	0.01	< 0.005	0.09	0.03	< 0.005	< 0.005	0.40	0.40	< 0.005	0.04	0.04	—	48.5	48.5	< 0.005	0.01	0.04	51.0

3.12. Linear, Grading & Excavation (2025) - 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 Equipmen	1.32	1.32	6.87	75.6	0.13	0.26	—	0.26	0.26	—	0.26	—	13,987	13,987	0.57	0.11	—	14,035
Dust From Material Movemen	—	—	—	—	—	—	7.63	7.63	—	3.68	3.68	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.04	0.41	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	76.6	76.6	< 0.005	< 0.005	—	76.9
Dust From Material Movemen	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.7	12.7	< 0.005	< 0.005	—	12.7
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	6.01	1.06	88.3	32.8	0.33	0.98	402	403	0.98	42.4	43.4	—	53,473	53,473	4.94	8.46	114	56,234
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
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	0.03	0.01	0.51	0.18	< 0.005	0.01	2.20	2.20	0.01	0.23	0.24	—	293	293	0.03	0.05	0.27	308
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
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	0.01	< 0.005	0.09	0.03	< 0.005	< 0.005	0.40	0.40	< 0.005	0.04	0.04	—	48.5	48.5	< 0.005	0.01	0.04	51.0

3.13. Linear, Grading & Excavation (2025) - 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 Equipmen	6.83	5.74	49.0	53.6	0.13	2.23	—	2.23	2.05	—	2.05	—	13,576	13,576	0.55	0.11	—	13,623
Dust From Material Movemen	—	—	—	—	—	—	19.6	19.6	—	9.44	9.44	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	6.83	5.74	49.0	53.6	0.13	2.23	—	2.23	2.05	—	2.05	—	13,576	13,576	0.55	0.11	—	13,623
Dust From Material Movemen	—	—	—	—	—	—	19.6	19.6	—	9.44	9.44	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.64	0.53	4.57	4.99	0.01	0.21	—	0.21	0.19	—	0.19	—	1,265	1,265	0.05	0.01	—	1,269
Dust From Material Movemen	—	—	—	—	—	—	1.83	1.83	—	0.88	0.88	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.12	0.10	0.83	0.91	< 0.005	0.04	—	0.04	0.03	—	0.03	—	209	209	0.01	< 0.005	—	210
Dust From Material Movemen	—	—	—	—	—	—	0.33	0.33	—	0.16	0.16	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	9.25	1.64	136	50.4	0.50	1.50	618	620	1.50	65.2	66.7	—	82,296	82,296	7.60	13.0	176	86,544
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.48	0.44	0.35	4.24	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	867	867	0.03	0.04	0.10	879
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	9.23	1.62	147	50.0	0.50	1.50	618	620	1.50	65.2	66.7	—	82,293	82,293	7.60	13.0	4.58	86,369
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.39	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.8	82.8	< 0.005	< 0.005	0.15	84.1
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	0.86	0.15	13.5	4.70	0.05	0.14	57.5	57.7	0.14	6.07	6.21	—	7,666	7,666	0.71	1.21	7.11	8,052
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.7	13.7	< 0.005	< 0.005	0.02	13.9
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	0.16	0.03	2.46	0.86	0.01	0.03	10.5	10.5	0.03	1.11	1.13	—	1,269	1,269	0.12	0.20	1.18	1,333

3.14. Linear, Grading & Excavation (2025) - 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 Equipmen	1.32	1.32	6.87	75.6	0.13	0.26	—	0.26	0.26	—	0.26	—	13,987	13,987	0.57	0.11	—	14,035
Dust From Material Movemen	—	—	—	—	—	—	7.65	7.65	—	3.68	3.68	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	1.32	1.32	6.87	75.6	0.13	0.26	—	0.26	0.26	—	0.26	—	13,987	13,987	0.57	0.11	—	14,035
Dust From Material Movemen	—	—	—	—	—	—	7.65	7.65	—	3.68	3.68	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.12	0.12	0.64	7.05	0.01	0.02	—	0.02	0.02	—	0.02	—	1,303	1,303	0.05	0.01	—	1,307
Dust From Material Movemen	—	—	—	—	—	—	0.71	0.71	—	0.34	0.34	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.02	0.02	0.12	1.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	216	216	0.01	< 0.005	—	216
Dust From Material Movemen	—	—	—	—	—	—	0.13	0.13	—	0.06	0.06	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	9.25	1.64	136	50.4	0.50	1.50	618	620	1.50	65.2	66.7	—	82,296	82,296	7.60	13.0	176	86,544
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.48	0.44	0.35	4.24	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	867	867	0.03	0.04	0.10	879
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	9.23	1.62	147	50.0	0.50	1.50	618	620	1.50	65.2	66.7	—	82,293	82,293	7.60	13.0	4.58	86,369
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.39	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.8	82.8	< 0.005	< 0.005	0.15	84.1
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	0.86	0.15	13.5	4.70	0.05	0.14	57.5	57.7	0.14	6.07	6.21	—	7,666	7,666	0.71	1.21	7.11	8,052
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.7	13.7	< 0.005	< 0.005	0.02	13.9
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	0.16	0.03	2.46	0.86	0.01	0.03	10.5	10.5	0.03	1.11	1.13	—	1,269	1,269	0.12	0.20	1.18	1,333

3.15. Linear, Grading & Excavation (2025) - 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 Equipmen	5.04	4.23	39.6	40.7	0.06	1.76	—	1.76	1.62	—	1.62	—	6,794	6,794	0.28	0.06	—	6,817
Dust From Material Movemen	—	—	—	—	—	—	18.7	18.7	—	9.34	9.34	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.14	0.12	1.08	1.11	< 0.005	0.05	—	0.05	0.04	—	0.04	—	186	186	0.01	< 0.005	—	187
Dust From Material Movemen	—	—	—	—	—	—	0.51	0.51	—	0.26	0.26	—	—	—	—	—	—	—
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 Equipmen	0.03	0.02	0.20	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.8	30.8	< 0.005	< 0.005	—	30.9
Dust From Material Movemen	—	—	—	—	—	—	0.09	0.09	—	0.05	0.05	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (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	0.24	0.04	3.90	1.33	0.01	0.04	16.4	16.4	0.04	1.73	1.77	—	2,182	2,182	0.20	0.35	0.12	2,291
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	0.01	< 0.005	0.10	0.04	< 0.005	< 0.005	0.45	0.45	< 0.005	0.05	0.05	—	59.8	59.8	0.01	0.01	0.06	62.8
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	9.90	9.90	< 0.005	< 0.005	0.01	10.4

3.16. Linear, Grading & Excavation (2025) - 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 Equipmen	0.71	0.71	5.97	42.3	0.07	0.13	—	0.13	0.13	—	0.13	—	7,193	7,193	0.29	0.06	—	7,218
Dust From Material Movemen	—	—	—	—	—	—	7.31	7.31	—	3.64	3.64	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.02	0.02	0.16	1.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	197	197	0.01	< 0.005	—	198
Dust From Material Movemen	—	—	—	—	—	—	0.20	0.20	—	0.10	0.10	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.03	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	32.6	32.6	< 0.005	< 0.005	—	32.7
Dust From Material Movemen	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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 Equipmen	0.71	0.71	5.97	42.3	0.07	0.13	—	0.13	0.13	—	0.13	—	7,193	7,193	0.29	0.06	—	7,218
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (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	0.24	0.04	3.90	1.33	0.01	0.04	16.4	16.4	0.04	1.73	1.77	—	2,182	2,182	0.20	0.35	0.12	2,291
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	0.01	< 0.005	0.10	0.04	< 0.005	< 0.005	0.45	0.45	< 0.005	0.05	0.05	—	59.8	59.8	0.01	0.01	0.06	62.8
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	9.90	9.90	< 0.005	< 0.005	0.01	10.4

3.17. Linear, Grading & Excavation (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (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	0.24	0.04	3.90	1.33	0.01	0.04	16.4	16.4	0.04	1.73	1.77	—	2,182	2,182	0.20	0.35	0.12	2,291
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	12.0	12.0	< 0.005	< 0.005	0.01	12.6
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.98	1.98	< 0.005	< 0.005	< 0.005	2.08

3.18. Linear, Grading & Excavation (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (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	0.24	0.04	3.90	1.33	0.01	0.04	16.4	16.4	0.04	1.73	1.77	—	2,182	2,182	0.20	0.35	0.12	2,291
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	12.0	12.0	< 0.005	< 0.005	0.01	12.6
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.98	1.98	< 0.005	< 0.005	< 0.005	2.08

3.19. Linear, Grading & Excavation (2026) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.08	0.08	0.04	0.83	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	157	157	< 0.005	0.01	0.56	159
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.48	5.48	< 0.005	< 0.005	0.01	5.57
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.91	0.91	< 0.005	< 0.005	< 0.005	0.92
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

3.20. Linear, Grading & Excavation (2026) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.08	0.08	0.04	0.83	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	157	157	< 0.005	0.01	0.56	159
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	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.48	5.48	< 0.005	< 0.005	0.01	5.57
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.91	0.91	< 0.005	< 0.005	< 0.005	0.92
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

3.21. Linear, Grading & Excavation (2025) - 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 Equipmen	0.33	0.28	2.66	4.02	0.01	0.09	—	0.09	0.09	—	0.09	—	594	594	0.02	< 0.005	—	596
Dust From Material Movemen	—	—	—	—	—	—	0.14	0.14	—	0.02	0.02	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.14	8.14	< 0.005	< 0.005	—	8.17
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.35	1.35	< 0.005	< 0.005	—	1.35
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	2.86	0.57	41.9	16.0	0.15	0.44	6.21	6.65	0.44	1.66	2.10	—	24,069	24,069	2.28	3.81	51.0	25,312
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	0.04	0.01	0.61	0.22	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	330	330	0.03	0.05	0.30	346
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	0.01	< 0.005	0.11	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	54.6	54.6	0.01	0.01	0.05	57.3

3.22. Linear, Grading & Excavation (2025) - 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 Equipmen	0.07	0.07	1.11	4.15	0.01	0.01	—	0.01	0.01	—	0.01	—	594	594	0.02	< 0.005	—	596
Dust From Material Movemen	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.02	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.14	8.14	< 0.005	< 0.005	—	8.17
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.35	1.35	< 0.005	< 0.005	—	1.35
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	2.86	0.57	41.9	16.0	0.15	0.44	6.21	6.65	0.44	1.66	2.10	—	24,069	24,069	2.28	3.81	51.0	25,312
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	0.04	0.01	0.61	0.22	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	330	330	0.03	0.05	0.30	346
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	0.01	< 0.005	0.11	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	54.6	54.6	0.01	0.01	0.05	57.3

3.23. Linear, Paving (2025) - 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 Equipmen	0.43	0.36	3.90	5.50	0.01	0.18	—	0.18	0.17	—	0.17	—	844	844	0.03	0.01	—	847
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.63	4.63	< 0.005	< 0.005	—	4.64
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.77	0.77	< 0.005	< 0.005	—	0.77
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	0.69	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	142	142	< 0.005	0.01	0.02	144
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.81
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.13
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

3.24. Linear, Paving (2025) - 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 Equipmen	0.08	0.08	0.42	5.93	0.01	0.02	—	0.02	0.02	—	0.02	—	844	844	0.03	0.01	—	847

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.63	4.63	< 0.005	< 0.005	—	4.64
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.77	0.77	< 0.005	< 0.005	—	0.77
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	0.69	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	142	142	< 0.005	0.01	0.02	144
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.81
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.13
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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
Tree Removal	Linear, Grubbing & Land Clearing	11/1/2024	11/2/2024	6.00	2.00	—
Excavation	Linear, Grading & Excavation	4/5/2025	5/3/2025	6.00	25.0	—
Riprap Installation	Linear, Grading & Excavation	5/4/2025	7/10/2025	6.00	58.0	—
Bedding	Linear, Grading & Excavation	7/11/2025	8/4/2025	6.00	21.0	—
Soil-filled riprap	Linear, Grading & Excavation	8/5/2025	9/9/2025	6.00	31.0	—
Aggregate Base	Linear, Grading & Excavation	9/10/2025	9/11/2025	6.00	2.00	—
Material fill	Linear, Grading & Excavation	9/12/2025	10/21/2025	6.00	34.0	—
IWM anchorage	Linear, Grading & Excavation	10/1/2025	10/11/2025	6.00	10.0	—
Live willow cuttings	Linear, Grading & Excavation	10/12/2025	10/14/2025	6.00	2.00	—
Planting, Monitoring and Maintenance	Linear, Grading & Excavation	7/1/2026	7/16/2026	6.00	14.0	—
Tree Scour	Linear, Grading & Excavation	4/1/2025	4/5/2025	6.00	5.00	—
Asphalt Paving	Linear, Paving	10/15/2025	10/16/2025	6.00	2.00	—

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
Tree Removal	Excavators	Diesel	Average	1.00	11.0	36.0	0.38
Tree Removal	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.37
Excavation	Excavators	Diesel	Average	3.00	11.0	36.0	0.38
Excavation	Rubber Tired Dozers	Diesel	Average	2.00	11.0	367	0.40
Excavation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.37
Excavation	Graders	Diesel	Average	1.00	11.0	148	0.41
Excavation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	11.0	84.0	0.37
Excavation	Crawler Tractors	Diesel	Average	1.00	11.0	87.0	0.43
Excavation	Other Construction Equipment	Diesel	Average	1.00	11.0	82.0	0.42
Riprap Installation	Excavators	Diesel	Average	3.00	11.0	36.0	0.38
Riprap Installation	Rubber Tired Dozers	Diesel	Average	2.00	11.0	367	0.40
Riprap Installation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.37
Riprap Installation	Graders	Diesel	Average	1.00	11.0	148	0.41
Riprap Installation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	11.0	84.0	0.37
Riprap Installation	Crawler Tractors	Diesel	Average	1.00	11.0	87.0	0.43
Riprap Installation	Other Construction Equipment	Diesel	Average	1.00	11.0	82.0	0.42
Bedding	Excavators	Diesel	Average	3.00	11.0	36.0	0.38
Bedding	Rubber Tired Dozers	Diesel	Average	2.00	11.0	367	0.40
Bedding	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.38
Bedding	Graders	Diesel	Average	1.00	11.0	148	0.41
Bedding	Tractors/Loaders/Backhoes	Diesel	Average	2.00	11.0	84.0	0.37
Bedding	Crawler Tractors	Diesel	Average	1.00	11.0	87.0	0.43
Bedding	Other Construction Equipment	Diesel	Average	1.00	11.0	82.0	0.42
Soil-filled riprap	Excavators	Diesel	Average	3.00	11.0	36.0	0.38
Soil-filled riprap	Rubber Tired Dozers	Diesel	Average	2.00	11.0	367	0.40
Soil-filled riprap	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.38
Soil-filled riprap	Graders	Diesel	Average	1.00	11.0	148	0.41
Soil-filled riprap	Tractors/Loaders/Backhoes	Diesel	Average	2.00	11.0	84.0	0.37

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Soil-filled riprap	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	235	0.37
Soil-filled riprap	Skid Steer Loaders	Diesel	Average	2.00	11.0	56.0	0.37
Soil-filled riprap	Cranes	Diesel	Average	1.00	11.0	80.0	0.29
Soil-filled riprap	Other Construction Equipment	Diesel	Average	1.00	11.0	82.0	0.42
Aggregate Base	Excavators	Diesel	Average	3.00	11.0	472	0.38
Aggregate Base	Rubber Tired Dozers	Diesel	Average	2.00	11.0	367	0.40
Aggregate Base	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.38
Aggregate Base	Graders	Diesel	Average	1.00	11.0	148	0.41
Aggregate Base	Tractors/Loaders/Backhoes	Diesel	Average	2.00	11.0	84.0	0.37
Aggregate Base	Crawler Tractors	Diesel	Average	1.00	11.0	87.0	0.43
Aggregate Base	Other Construction Equipment	Diesel	Average	1.00	11.0	82.0	0.42
Material fill	Excavators	Diesel	Average	3.00	11.0	472	0.38
Material fill	Rubber Tired Dozers	Diesel	Average	2.00	11.0	367	0.40
Material fill	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.38
Material fill	Graders	Diesel	Average	1.00	11.0	148	0.41
Material fill	Tractors/Loaders/Backhoes	Diesel	Average	2.00	11.0	84.0	0.37
Material fill	Crawler Tractors	Diesel	Average	1.00	11.0	87.0	0.43
Material fill	Other Construction Equipment	Diesel	Average	1.00	11.0	82.0	0.42
IWM anchorage	Excavators	Diesel	Average	3.00	11.0	36.0	0.38
IWM anchorage	Rubber Tired Dozers	Diesel	Average	2.00	11.0	367	0.40
IWM anchorage	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.37
IWM anchorage	Graders	Diesel	Average	1.00	11.0	148	0.41
IWM anchorage	Tractors/Loaders/Backhoes	Diesel	Average	2.00	11.0	84.0	0.37
IWM anchorage	Other Construction Equipment	Diesel	Average	1.00	11.0	82.0	0.42
Tree Scour	Excavators	Diesel	Average	1.00	11.0	36.0	0.38
Tree Scour	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.37
Asphalt Paving	Pavers	Diesel	Average	1.00	11.0	81.0	0.42
Asphalt Paving	Paving Equipment	Diesel	Average	1.00	11.0	89.0	0.36

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Tree Removal	Excavators	Diesel	Tier 4 Final	1.00	11.0	36.0	0.38
Tree Removal	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	11.0	84.0	0.37
Excavation	Excavators	Diesel	Tier 4 Final	3.00	11.0	36.0	0.38
Excavation	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	11.0	367	0.40
Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
Excavation	Graders	Diesel	Tier 4 Final	1.00	11.0	148	0.41
Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
Excavation	Crawler Tractors	Diesel	Tier 4 Final	1.00	11.0	87.0	0.43
Excavation	Other Construction Equipment	Diesel	Tier 4 Final	1.00	11.0	82.0	0.42
Riprap Installation	Excavators	Diesel	Tier 4 Final	3.00	11.0	36.0	0.38
Riprap Installation	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	11.0	367	0.40
Riprap Installation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
Riprap Installation	Graders	Diesel	Tier 4 Final	1.00	11.0	148	0.41
Riprap Installation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
Riprap Installation	Crawler Tractors	Diesel	Tier 4 Final	1.00	11.0	87.0	0.43
Riprap Installation	Other Construction Equipment	Diesel	Tier 4 Final	1.00	11.0	82.0	0.42
Bedding	Excavators	Diesel	Tier 4 Final	3.00	11.0	36.0	0.38
Bedding	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	11.0	367	0.40
Bedding	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.38
Bedding	Graders	Diesel	Tier 4 Final	1.00	11.0	148	0.41
Bedding	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
Bedding	Crawler Tractors	Diesel	Tier 4 Final	1.00	11.0	87.0	0.43
Bedding	Other Construction Equipment	Diesel	Tier 4 Final	1.00	11.0	82.0	0.42
Soil-filled riprap	Excavators	Diesel	Tier 4 Final	3.00	11.0	36.0	0.38
Soil-filled riprap	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	11.0	367	0.40
Soil-filled riprap	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	11.0	84.0	0.38
Soil-filled riprap	Graders	Diesel	Tier 4 Final	1.00	11.0	148	0.41
Soil-filled riprap	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.37
Soil-filled riprap	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	11.0	84.0	0.37
Soil-filled riprap	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	11.0	235	0.37

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Soil-filled riprap	Skid Steer Loaders	Diesel	Tier 4 Final	2.00	11.0	56.0	0.37
Soil-filled riprap	Cranes	Diesel	Tier 4 Final	1.00	11.0	80.0	0.29
Soil-filled riprap	Other Construction Equipment	Diesel	Tier 4 Final	1.00	11.0	82.0	0.42
Aggregate Base	Excavators	Diesel	Tier 4 Final	3.00	11.0	472	0.38
Aggregate Base	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	11.0	367	0.40
Aggregate Base	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.38
Aggregate Base	Graders	Diesel	Tier 4 Final	1.00	11.0	148	0.41
Aggregate Base	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
Aggregate Base	Crawler Tractors	Diesel	Tier 4 Final	1.00	11.0	87.0	0.43
Aggregate Base	Other Construction Equipment	Diesel	Tier 4 Final	1.00	11.0	82.0	0.42
Material fill	Excavators	Diesel	Tier 4 Final	3.00	11.0	472	0.38
Material fill	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	11.0	367	0.40
Material fill	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.38
Material fill	Graders	Diesel	Tier 4 Final	1.00	11.0	148	0.41
Material fill	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
Material fill	Crawler Tractors	Diesel	Tier 4 Final	1.00	11.0	87.0	0.43
Material fill	Other Construction Equipment	Diesel	Tier 4 Final	1.00	11.0	82.0	0.42
IWM anchorage	Excavators	Diesel	Tier 4 Final	3.00	11.0	36.0	0.38
IWM anchorage	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	11.0	367	0.40
IWM anchorage	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
IWM anchorage	Graders	Diesel	Tier 4 Final	1.00	11.0	148	0.41
IWM anchorage	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
IWM anchorage	Other Construction Equipment	Diesel	Tier 4 Final	1.00	11.0	82.0	0.42
Tree Scour	Excavators	Diesel	Tier 4 Final	1.00	11.0	36.0	0.38
Tree Scour	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	11.0	84.0	0.37
Asphalt Paving	Pavers	Diesel	Tier 4 Final	1.00	11.0	81.0	0.42
Asphalt Paving	Paving Equipment	Diesel	Tier 4 Final	1.00	11.0	89.0	0.36

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Tree Removal	—	—	—	—
Tree Removal	Worker	20.0	10.0	LDA,LDT1,LDT2
Tree Removal	Vendor	0.00	7.10	HHDT,MHDT
Tree Removal	Hauling	135	30.0	HHDT
Tree Removal	Onsite truck	0.00	—	HHDT
Excavation	—	—	—	—
Excavation	Worker	122	10.0	LDA,LDT1,LDT2
Excavation	Vendor	0.00	7.10	HHDT,MHDT
Excavation	Hauling	391	30.0	HHDT
Excavation	Onsite truck	—	—	HHDT
Riprap Installation	—	—	—	—
Riprap Installation	Worker	122	0.00	LDA,LDT1,LDT2
Riprap Installation	Vendor	0.00	7.10	HHDT,MHDT
Riprap Installation	Hauling	269	100	HHDT
Riprap Installation	Onsite truck	—	—	HHDT
Bedding	—	—	—	—
Bedding	Worker	122	10.0	LDA,LDT1,LDT2
Bedding	Vendor	0.00	7.10	HHDT,MHDT
Bedding	Hauling	273	100	HHDT
Bedding	Onsite truck	—	—	HHDT
Soil-filled riprap	—	—	—	—
Soil-filled riprap	Worker	122	10.0	LDA,LDT1,LDT2
Soil-filled riprap	Vendor	0.00	7.10	HHDT,MHDT
Soil-filled riprap	Hauling	267	100	HHDT
Soil-filled riprap	Onsite truck	—	—	HHDT
Aggregate Base	—	—	—	—
Aggregate Base	Worker	122	10.0	LDA,LDT1,LDT2
Aggregate Base	Vendor	0.00	7.10	HHDT,MHDT
Aggregate Base	Hauling	147	100	HHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Aggregate Base	Onsite truck	—	—	HHDT
Material fill	—	—	—	—
Material fill	Worker	122	10.0	LDA,LDT1,LDT2
Material fill	Vendor	0.00	7.10	HHDT,MHDT
Material fill	Hauling	226	100	HHDT
Material fill	Onsite truck	—	—	HHDT
IWM anchorage	—	—	—	—
IWM anchorage	Worker	0.00	10.0	LDA,LDT1,LDT2
IWM anchorage	Vendor	0.00	7.10	HHDT,MHDT
IWM anchorage	Hauling	6.00	100	HHDT
IWM anchorage	Onsite truck	—	—	HHDT
Live willow cuttings	—	—	—	—
Live willow cuttings	Worker	0.00	10.0	LDA,LDT1,LDT2
Live willow cuttings	Vendor	0.00	7.10	HHDT,MHDT
Live willow cuttings	Hauling	6.00	100	HHDT
Live willow cuttings	Onsite truck	—	—	HHDT
Planting, Monitoring and Maintenance	—	—	—	—
Planting, Monitoring and Maintenance	Worker	20.0	10.0	LDA,LDT1,LDT2
Planting, Monitoring and Maintenance	Vendor	0.00	7.10	HHDT,MHDT
Planting, Monitoring and Maintenance	Hauling	0.00	0.00	HHDT
Planting, Monitoring and Maintenance	Onsite truck	—	—	HHDT
Asphalt Paving	—	—	—	—
Asphalt Paving	Worker	20.0	10.0	LDA,LDT1,LDT2
Asphalt Paving	Vendor	0.00	7.10	HHDT,MHDT
Asphalt Paving	Hauling	0.00	30.0	HHDT
Asphalt Paving	Onsite truck	—	—	HHDT
Tree Scour	—	—	—	—
Tree Scour	Worker	0.00	10.0	LDA,LDT1,LDT2
Tree Scour	Vendor	0.00	7.10	HHDT,MHDT
Tree Scour	Hauling	218	30.0	HHDT
Tree Scour	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Tree Removal	—	—	—	—
Tree Removal	Worker	20.0	10.0	LDA,LDT1,LDT2
Tree Removal	Vendor	0.00	7.10	HHDT,MHDT
Tree Removal	Hauling	135	30.0	HHDT
Tree Removal	Onsite truck	0.00	—	HHDT
Excavation	—	—	—	—
Excavation	Worker	122	10.0	LDA,LDT1,LDT2
Excavation	Vendor	0.00	7.10	HHDT,MHDT
Excavation	Hauling	391	30.0	HHDT
Excavation	Onsite truck	—	—	HHDT
Riprap Installation	—	—	—	—
Riprap Installation	Worker	122	0.00	LDA,LDT1,LDT2
Riprap Installation	Vendor	0.00	7.10	HHDT,MHDT
Riprap Installation	Hauling	269	100	HHDT
Riprap Installation	Onsite truck	—	—	HHDT
Bedding	—	—	—	—
Bedding	Worker	122	10.0	LDA,LDT1,LDT2
Bedding	Vendor	0.00	7.10	HHDT,MHDT
Bedding	Hauling	273	100	HHDT
Bedding	Onsite truck	—	—	HHDT
Soil-filled riprap	—	—	—	—
Soil-filled riprap	Worker	122	10.0	LDA,LDT1,LDT2
Soil-filled riprap	Vendor	0.00	7.10	HHDT,MHDT
Soil-filled riprap	Hauling	267	100	HHDT
Soil-filled riprap	Onsite truck	—	—	HHDT
Aggregate Base	—	—	—	—
Aggregate Base	Worker	122	10.0	LDA,LDT1,LDT2
Aggregate Base	Vendor	0.00	7.10	HHDT,MHDT
Aggregate Base	Hauling	147	100	HHDT
Aggregate Base	Onsite truck	—	—	HHDT
Material fill	—	—	—	—

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Material fill	Worker	122	10.0	LDA,LDT1,LDT2
Material fill	Vendor	0.00	7.10	HHDT,MHDT
Material fill	Hauling	226	100	HHDT
Material fill	Onsite truck	—	—	HHDT
IWM anchorage	—	—	—	—
IWM anchorage	Worker	0.00	10.0	LDA,LDT1,LDT2
IWM anchorage	Vendor	0.00	7.10	HHDT,MHDT
IWM anchorage	Hauling	6.00	100	HHDT
IWM anchorage	Onsite truck	—	—	HHDT
Live willow cuttings	—	—	—	—
Live willow cuttings	Worker	0.00	10.0	LDA,LDT1,LDT2
Live willow cuttings	Vendor	0.00	7.10	HHDT,MHDT
Live willow cuttings	Hauling	6.00	100	HHDT
Live willow cuttings	Onsite truck	—	—	HHDT
Planting, Monitoring and Maintenance	—	—	—	—
Planting, Monitoring and Maintenance	Worker	20.0	10.0	LDA,LDT1,LDT2
Planting, Monitoring and Maintenance	Vendor	0.00	7.10	HHDT,MHDT
Planting, Monitoring and Maintenance	Hauling	0.00	0.00	HHDT
Planting, Monitoring and Maintenance	Onsite truck	—	—	HHDT
Asphalt Paving	—	—	—	—
Asphalt Paving	Worker	20.0	10.0	LDA,LDT1,LDT2
Asphalt Paving	Vendor	0.00	7.10	HHDT,MHDT
Asphalt Paving	Hauling	0.00	30.0	HHDT
Asphalt Paving	Onsite truck	—	—	HHDT
Tree Scour	—	—	—	—
Tree Scour	Worker	0.00	10.0	LDA,LDT1,LDT2
Tree Scour	Vendor	0.00	7.10	HHDT,MHDT
Tree Scour	Hauling	218	30.0	HHDT
Tree Scour	Onsite truck	—	—	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 (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Tree Removal	0.00	2,153	30.0	0.00	—
Excavation	0.00	78,241	30.0	0.00	—
Riprap Installation	124,830	0.00	30.0	0.00	—
Bedding	45,848	0.00	30.0	0.00	—
Soil-filled riprap	66,309	0.00	30.0	0.00	—
Aggregate Base	2,349	0.00	30.0	0.00	—
Material fill	61,530	0.00	30.0	0.00	—
IWM anchorage	0.00	0.00	30.0	0.00	—
Live willow cuttings	0.00	0.00	30.0	0.00	—
Planting, Monitoring and Maintenance	0.00	0.00	30.0	0.00	—
Tree Scour	8,725	0.00	30.0	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
User Defined Linear	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	375	0.01	< 0.005
2025	0.00	375	0.01	< 0.005
2026	0.00	375	0.01	< 0.005

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	19.9	annual days of extreme heat
Extreme Precipitation	6.45	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	1	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	1	1	1	2
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	47.0
AQ-PM	38.3
AQ-DPM	66.4
Drinking Water	16.8
Lead Risk Housing	59.9
Pesticides	1.52
Toxic Releases	32.2
Traffic	44.2
Effect Indicators	—
CleanUp Sites	4.12
Groundwater	2.11
Haz Waste Facilities/Generators	30.2
Impaired Water Bodies	66.7
Solid Waste	24.8
Sensitive Population	—
Asthma	26.5
Cardio-vascular	20.9
Low Birth Weights	21.4
Socioeconomic Factor Indicators	—
Education	0.96
Housing	8.86
Linguistic	12.3
Poverty	19.1
Unemployment	48.3

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	88.75914282
Employed	68.38188118
Median HI	82.12498396
Education	—
Bachelor's or higher	93.21185679
High school enrollment	100
Preschool enrollment	71.32041576
Transportation	—
Auto Access	42.10188631
Active commuting	59.05299628
Social	—
2-parent households	69.28012319
Voting	99.39689465
Neighborhood	—
Alcohol availability	71.62838445
Park access	81.35506224
Retail density	33.56858719
Supermarket access	25.79237777
Tree canopy	95.49595791
Housing	—
Homeownership	72.09033748
Housing habitability	86.59052996
Low-inc homeowner severe housing cost burden	92.78839985
Low-inc renter severe housing cost burden	59.05299628
Uncrowded housing	70.21686129
Health Outcomes	—
Insured adults	90.63261902
Arthritis	15.0
Asthma ER Admissions	63.7

Indicator	Result for Project Census Tract
High Blood Pressure	12.4
Cancer (excluding skin)	4.6
Asthma	72.9
Coronary Heart Disease	31.2
Chronic Obstructive Pulmonary Disease	68.2
Diagnosed Diabetes	82.1
Life Expectancy at Birth	43.8
Cognitively Disabled	76.7
Physically Disabled	59.0
Heart Attack ER Admissions	50.6
Mental Health Not Good	91.8
Chronic Kidney Disease	45.1
Obesity	70.2
Pedestrian Injuries	80.1
Physical Health Not Good	85.2
Stroke	58.2
Health Risk Behaviors	—
Binge Drinking	38.6
Current Smoker	90.3
No Leisure Time for Physical Activity	96.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	31.0
Elderly	15.7
English Speaking	91.4
Foreign-born	2.6
Outdoor Workers	78.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	74.6
Traffic Density	37.2
Traffic Access	23.0

Indicator	Result for Project Census Tract
Other Indices	—
Hardship	19.0
Other Decision Support	—
2016 Voting	99.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	10.0
Healthy Places Index Score for Project Location (b)	90.0
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 phasing provided by USACE.
Construction: Off-Road Equipment	Construction equipment provided by USACE.
Construction: Dust From Material Movement	Material quantities provided from USACE.
Construction: Trips and VMT	Truck trips provided by USACE.
Construction: On-Road Fugitive Dust	Conservative assumptions given the linear feet of construction and possible haul routes.
Construction: Paving	Site is unpaved.

American River C3B Site 4-2 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	American River C3B Site 4-2
Construction Start Date	11/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	37.8
Location	38.580672767397914, -121.42531743920867
County	Sacramento
City	Sacramento
Air District	Sacramento Metropolitan AQMD
Air Basin	Sacramento Valley
TAZ	514
EDFZ	13
Electric Utility	Sacramento Municipal Utility District
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
User Defined Linear	1.00	Mile	7.40	0.00	—	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	16.5	7.45	192	106	0.65	3.81	668	672	3.63	77.9	81.5	—	99,910	99,910	8.52	13.8	185	104,413
Mit.	11.0	3.04	150	129	0.66	1.84	656	658	1.84	72.1	74.0	—	100,320	100,320	8.54	13.8	185	104,825
% Reduced	33%	59%	22%	-21%	-1%	52%	2%	2%	49%	7%	9%	—	> -0.5%	> -0.5%	> -0.5%	> -0.5%	—	> -0.5%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.73	0.44	7.49	6.35	0.03	0.15	17.4	17.5	0.15	1.85	2.00	—	3,105	3,105	0.25	0.39	0.15	3,228
Mit.	0.44	0.21	5.79	6.47	0.03	0.05	17.4	17.4	0.05	1.85	1.90	—	3,105	3,105	0.25	0.39	0.15	3,228
% Reduced	40%	53%	23%	-2%	—	66%	< 0.5%	1%	64%	< 0.5%	5%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.55	0.27	6.57	3.71	0.02	0.13	20.5	20.6	0.13	2.47	2.59	—	3,063	3,063	0.26	0.42	2.45	3,197

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Mit.	0.35	0.11	5.04	4.17	0.02	0.06	20.0	20.1	0.06	2.23	2.29	—	3,084	3,084	0.26	0.42	2.45	3,218
% Reduced	37%	61%	23%	-12%	—	56%	2%	3%	54%	10%	12%	—	-1%	-1%	—	—	—	-1%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.10	0.05	1.20	0.68	< 0.005	0.02	3.74	3.77	0.02	0.45	0.47	—	507	507	0.04	0.07	0.41	529
Mit.	0.06	0.02	0.92	0.76	< 0.005	0.01	3.65	3.66	0.01	0.41	0.42	—	511	511	0.04	0.07	0.41	533
% Reduced	37%	61%	23%	-12%	-1%	56%	2%	3%	54%	10%	12%	—	-1%	-1%	> -0.5%	> -0.5%	—	-1%

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	16.5	7.45	192	106	0.65	3.81	668	672	3.63	77.9	81.5	—	99,910	99,910	8.52	13.8	185	104,413
2026	0.08	0.08	0.04	0.83	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	157	157	< 0.005	0.01	0.56	159
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.73	0.44	7.49	6.35	0.03	0.15	17.4	17.5	0.15	1.85	2.00	—	3,105	3,105	0.25	0.39	0.15	3,228
2025	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
2026	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	17.0	17.0	< 0.005	< 0.005	0.01	17.7
2025	0.55	0.27	6.57	3.71	0.02	0.13	20.5	20.6	0.13	2.47	2.59	—	3,063	3,063	0.26	0.42	2.45	3,197
2026	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.74	2.74	< 0.005	< 0.005	< 0.005	2.78
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.82	2.82	< 0.005	< 0.005	< 0.005	2.93
2025	0.10	0.05	1.20	0.68	< 0.005	0.02	3.74	3.77	0.02	0.45	0.47	—	507	507	0.04	0.07	0.41	529
2026	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	11.0	3.04	150	129	0.66	1.84	656	658	1.84	72.1	74.0	—	100,320	100,320	8.54	13.8	185	104,825
2026	0.08	0.08	0.04	0.83	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	157	157	< 0.005	0.01	0.56	159
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.44	0.21	5.79	6.47	0.03	0.05	17.4	17.4	0.05	1.85	1.90	—	3,105	3,105	0.25	0.39	0.15	3,228
2025	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
2026	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	17.0	17.0	< 0.005	< 0.005	0.01	17.7
2025	0.35	0.11	5.04	4.17	0.02	0.06	20.0	20.1	0.06	2.23	2.29	—	3,084	3,084	0.26	0.42	2.45	3,218
2026	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.74	2.74	< 0.005	< 0.005	< 0.005	2.78
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.82	2.82	< 0.005	< 0.005	< 0.005	2.93
2025	0.06	0.02	0.92	0.76	< 0.005	0.01	3.65	3.66	0.01	0.41	0.42	—	511	511	0.04	0.07	0.41	533
2026	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46

3. Construction Emissions Details

3.1. Linear, Grubbing & Land Clearing (2024) - 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 Equipmen	0.36	0.30	2.81	4.03	0.01	0.11	—	0.11	0.10	—	0.10	—	594	594	0.02	< 0.005	—	596
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.26	3.26	< 0.005	< 0.005	—	3.27
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.54	0.54	< 0.005	< 0.005	—	0.54

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.07	0.75	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	145	145	0.01	0.01	0.02	147
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	0.29	0.07	4.61	1.57	0.03	0.04	17.2	17.3	0.04	1.82	1.86	—	2,366	2,366	0.22	0.38	0.13	2,485
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.83
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	13.0	13.0	< 0.005	< 0.005	0.01	13.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.14
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.15	2.15	< 0.005	< 0.005	< 0.005	2.26

3.2. Linear, Grubbing & Land Clearing (2024) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.07	0.07	1.11	4.15	0.01	0.01	—	0.01	0.01	—	0.01	—	594	594	0.02	< 0.005	—	596
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.26	3.26	< 0.005	< 0.005	—	3.27
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.54	0.54	< 0.005	< 0.005	—	0.54
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	0.08	0.07	0.07	0.75	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	145	145	0.01	0.01	0.02	147
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	0.29	0.07	4.61	1.57	0.03	0.04	17.2	17.3	0.04	1.82	1.86	—	2,366	2,366	0.22	0.38	0.13	2,485
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.83
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	13.0	13.0	< 0.005	< 0.005	0.01	13.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.14
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.15	2.15	< 0.005	< 0.005	< 0.005	2.26

3.3. Linear, Grading & Excavation (2025) - 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 Equipmen	5.51	4.63	43.1	44.1	0.07	2.01	—	2.01	1.85	—	1.85	—	7,273	7,273	0.30	0.06	—	7,298
Dust From Material Movemen	—	—	—	—	—	—	19.7	19.7	—	9.45	9.45	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	0.05	0.04	0.35	0.36	< 0.005	0.02	—	0.02	0.02	—	0.02	—	59.8	59.8	< 0.005	< 0.005	—	60.0
Dust From Material Movemen	—	—	—	—	—	—	0.16	0.16	—	0.08	0.08	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.06	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.90	9.90	< 0.005	< 0.005	—	9.93
Dust From Material Movemen	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	4.25	0.84	62.3	23.8	0.22	0.65	266	267	0.65	28.1	28.7	—	35,813	35,813	3.39	5.67	75.8	37,662
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.31	7.31	< 0.005	< 0.005	0.01	7.42
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	0.03	0.01	0.54	0.20	< 0.005	0.01	2.19	2.19	0.01	0.23	0.24	—	294	294	0.03	0.05	0.27	309
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.21	1.21	< 0.005	< 0.005	< 0.005	1.23
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	0.01	< 0.005	0.10	0.04	< 0.005	< 0.005	0.40	0.40	< 0.005	0.04	0.04	—	48.7	48.7	< 0.005	0.01	0.04	51.2

3.4. Linear, Grading & Excavation (2025) - 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 Equipmen	0.76	0.76	6.21	45.6	0.07	0.14	—	0.14	0.14	—	0.14	—	7,673	7,673	0.31	0.06	—	7,699
Dust From Material Movemen	—	—	—	—	—	—	7.68	7.68	—	3.69	3.69	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.05	0.38	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	63.1	63.1	< 0.005	< 0.005	—	63.3
Dust From Material Movemen	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.4	10.4	< 0.005	< 0.005	—	10.5
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	4.25	0.84	62.3	23.8	0.22	0.65	266	267	0.65	28.1	28.7	—	35,813	35,813	3.39	5.67	75.8	37,662
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.31	7.31	< 0.005	< 0.005	0.01	7.42
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	0.03	0.01	0.54	0.20	< 0.005	0.01	2.19	2.19	0.01	0.23	0.24	—	294	294	0.03	0.05	0.27	309
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.21	1.21	< 0.005	< 0.005	< 0.005	1.23
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	0.01	< 0.005	0.10	0.04	< 0.005	< 0.005	0.40	0.40	< 0.005	0.04	0.04	—	48.7	48.7	< 0.005	0.01	0.04	51.2

3.5. Linear, Grading & Excavation (2025) - 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 Equipmen	5.51	4.63	43.1	44.1	0.07	2.01	—	2.01	1.85	—	1.85	—	7,273	7,273	0.30	0.06	—	7,298
Dust From Material Movemen	—	—	—	—	—	—	19.6	19.6	—	9.44	9.44	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.05	0.04	0.35	0.36	< 0.005	0.02	—	0.02	0.02	—	0.02	—	59.8	59.8	< 0.005	< 0.005	—	60.0
Dust From Material Movemen	—	—	—	—	—	—	0.16	0.16	—	0.08	0.08	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.06	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.90	9.90	< 0.005	< 0.005	—	9.93
Dust From Material Movemen	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
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	8.91	1.58	131	48.6	0.49	1.45	596	597	1.45	62.9	64.3	—	79,300	79,300	7.32	12.6	170	83,394
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	0.07	0.01	1.14	0.40	< 0.005	0.01	4.89	4.90	0.01	0.52	0.53	—	652	652	0.06	0.10	0.60	685
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	0.01	< 0.005	0.21	0.07	< 0.005	< 0.005	0.89	0.90	< 0.005	0.09	0.10	—	108	108	0.01	0.02	0.10	113

3.6. Linear, Grading & Excavation (2025) - 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 Equipmen	0.76	0.76	6.21	45.6	0.07	0.14	—	0.14	0.14	—	0.14	—	7,673	7,673	0.31	0.06	—	7,699
Dust From Material Movemen	—	—	—	—	—	—	7.65	7.65	—	3.68	3.68	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.05	0.38	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	63.1	63.1	< 0.005	< 0.005	—	63.3
Dust From Material Movemen	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.4	10.4	< 0.005	< 0.005	—	10.5
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
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	8.91	1.58	131	48.6	0.49	1.45	596	597	1.45	62.9	64.3	—	79,300	79,300	7.32	12.6	170	83,394
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	0.07	0.01	1.14	0.40	< 0.005	0.01	4.89	4.90	0.01	0.52	0.53	—	652	652	0.06	0.10	0.60	685
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	0.01	< 0.005	0.21	0.07	< 0.005	< 0.005	0.89	0.90	< 0.005	0.09	0.10	—	108	108	0.01	0.02	0.10	113

3.7. Linear, Grading & Excavation (2025) - 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	5.87	4.94	46.4	48.7	0.08	2.04	—	2.04	1.88	—	1.88	—	8,743	8,743	0.35	0.07	—	8,773
Dust From Material Movement	—	—	—	—	—	—	18.8	18.8	—	9.35	9.35	—	—	—	—	—	—	—
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	0.05	0.04	0.38	0.40	< 0.005	0.02	—	0.02	0.02	—	0.02	—	71.9	71.9	< 0.005	< 0.005	—	72.1
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
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	0.01	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.9	11.9	< 0.005	< 0.005	—	11.9
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	6.39	1.13	93.9	34.8	0.35	1.04	427	428	1.04	45.1	46.1	—	56,868	56,868	5.25	9.00	122	59,804
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	0.05	0.01	0.82	0.29	< 0.005	0.01	3.51	3.52	0.01	0.37	0.38	—	467	467	0.04	0.07	0.43	491
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	0.01	< 0.005	0.15	0.05	< 0.005	< 0.005	0.64	0.64	< 0.005	0.07	0.07	—	77.4	77.4	0.01	0.01	0.07	81.3

3.8. Linear, Grading & Excavation (2025) - 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 Equipmen	1.21	1.16	12.1	53.3	0.08	0.27	—	0.27	0.26	—	0.26	—	9,142	9,142	0.37	0.07	—	9,174
Dust From Material Movemen	—	—	—	—	—	—	7.35	7.35	—	3.65	3.65	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.01	0.01	0.10	0.44	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	75.1	75.1	< 0.005	< 0.005	—	75.4
Dust From Material Movemen	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.4	12.4	< 0.005	< 0.005	—	12.5
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
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	6.39	1.13	93.9	34.8	0.35	1.04	427	428	1.04	45.1	46.1	—	56,868	56,868	5.25	9.00	122	59,804
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	0.05	0.01	0.82	0.29	< 0.005	0.01	3.51	3.52	0.01	0.37	0.38	—	467	467	0.04	0.07	0.43	491
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	0.01	< 0.005	0.15	0.05	< 0.005	< 0.005	0.64	0.64	< 0.005	0.07	0.07	—	77.4	77.4	0.01	0.01	0.07	81.3

3.9. Linear, Grading & Excavation (2025) - 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 Equipmen	6.74	5.66	49.0	54.8	0.13	2.16	—	2.16	1.99	—	1.99	—	13,809	13,809	0.56	0.11	—	13,856
Dust From Material Movemen	—	—	—	—	—	—	19.6	19.6	—	9.43	9.43	—	—	—	—	—	—	—
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 Equipmen	0.06	0.05	0.40	0.45	< 0.005	0.02	—	0.02	0.02	—	0.02	—	113	113	< 0.005	< 0.005	—	114
Dust From Material Movemen	—	—	—	—	—	—	0.16	0.16	—	0.08	0.08	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.01	0.01	0.07	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.9
Dust From Material Movemen	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
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	6.89	1.22	101	37.6	0.38	1.12	461	462	1.12	48.6	49.8	—	61,355	61,355	5.66	9.71	131	64,522
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	0.06	0.01	0.89	0.31	< 0.005	0.01	3.79	3.79	0.01	0.40	0.41	—	504	504	0.05	0.08	0.47	530
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	0.01	< 0.005	0.16	0.06	< 0.005	< 0.005	0.69	0.69	< 0.005	0.07	0.07	—	83.5	83.5	0.01	0.01	0.08	87.7

3.10. Linear, Grading & Excavation (2025) - 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 Equipmen	1.39	1.39	10.1	77.3	0.13	0.27	—	0.27	0.27	—	0.27	—	14,219	14,219	0.58	0.12	—	14,268
Dust From Material Movemen	—	—	—	—	—	—	7.64	7.64	—	3.68	3.68	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.08	0.64	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	117	117	< 0.005	< 0.005	—	117
Dust From Material Movemen	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.3	19.3	< 0.005	< 0.005	—	19.4
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	6.89	1.22	101	37.6	0.38	1.12	461	462	1.12	48.6	49.8	—	61,355	61,355	5.66	9.71	131	64,522
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	0.06	0.01	0.89	0.31	< 0.005	0.01	3.79	3.79	0.01	0.40	0.41	—	504	504	0.05	0.08	0.47	530
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	0.01	< 0.005	0.16	0.06	< 0.005	< 0.005	0.69	0.69	< 0.005	0.07	0.07	—	83.5	83.5	0.01	0.01	0.08	87.7

3.11. Linear, Grading & Excavation (2025) - 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 Equipmen	6.83	5.74	49.0	53.6	0.13	2.23	—	2.23	2.05	—	2.05	—	13,576	13,576	0.55	0.11	—	13,623
Dust From Material Movemen	—	—	—	—	—	—	19.6	19.6	—	9.44	9.44	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.06	0.05	0.40	0.44	< 0.005	0.02	—	0.02	0.02	—	0.02	—	112	112	< 0.005	< 0.005	—	112
Dust From Material Movemen	—	—	—	—	—	—	0.16	0.16	—	0.08	0.08	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.07	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.5	18.5	< 0.005	< 0.005	—	18.5
Dust From Material Movemen	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
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	9.70	1.72	143	52.9	0.53	1.57	648	650	1.57	68.4	70.0	—	86,333	86,333	7.97	13.7	185	90,790
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	0.08	0.01	1.25	0.44	< 0.005	0.01	5.33	5.34	0.01	0.56	0.57	—	710	710	0.07	0.11	0.66	745
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	0.01	< 0.005	0.23	0.08	< 0.005	< 0.005	0.97	0.97	< 0.005	0.10	0.10	—	117	117	0.01	0.02	0.11	123

3.12. Linear, Grading & Excavation (2025) - 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 Equipmen	1.32	1.32	6.87	75.6	0.13	0.26	—	0.26	0.26	—	0.26	—	13,987	13,987	0.57	0.11	—	14,035
Dust From Material Movemen	—	—	—	—	—	—	7.66	7.66	—	3.68	3.68	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.06	0.62	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	115	115	< 0.005	< 0.005	—	115
Dust From Material Movemen	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.0	19.0	< 0.005	< 0.005	—	19.1
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
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	9.70	1.72	143	52.9	0.53	1.57	648	650	1.57	68.4	70.0	—	86,333	86,333	7.97	13.7	185	90,790
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	0.08	0.01	1.25	0.44	< 0.005	0.01	5.33	5.34	0.01	0.56	0.57	—	710	710	0.07	0.11	0.66	745
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	0.01	< 0.005	0.23	0.08	< 0.005	< 0.005	0.97	0.97	< 0.005	0.10	0.10	—	117	117	0.01	0.02	0.11	123

3.13. Linear, Grading & Excavation (2026) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.08	0.08	0.04	0.83	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	157	157	< 0.005	0.01	0.56	159
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.74	2.74	< 0.005	< 0.005	< 0.005	2.78
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46
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

3.14. Linear, Grading & Excavation (2026) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.08	0.08	0.04	0.83	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	157	157	< 0.005	0.01	0.56	159
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.74	2.74	< 0.005	< 0.005	< 0.005	2.78
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46
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

3.15. Linear, Paving (2025) - 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 Equipmen	0.43	0.36	3.90	5.50	0.01	0.18	—	0.18	0.17	—	0.17	—	844	844	0.03	0.01	—	847
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.63	4.63	< 0.005	< 0.005	—	4.64
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.77	0.77	< 0.005	< 0.005	—	0.77
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	0.16	0.03	2.27	0.88	0.01	0.02	0.32	0.35	0.02	0.09	0.11	—	1,260	1,260	0.12	0.20	2.65	1,325
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.90	6.90	< 0.005	< 0.005	0.01	7.25
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.14	1.14	< 0.005	< 0.005	< 0.005	1.20

3.16. Linear, Paving (2025) - 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 Equipmen	0.86	0.72	7.81	11.0	0.02	0.37	—	0.37	0.34	—	0.34	—	1,689	1,689	0.07	0.01	—	1,695
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.25	9.25	< 0.005	< 0.005	—	9.29
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.53	1.53	< 0.005	< 0.005	—	1.54
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.16	0.03	2.27	0.88	0.01	0.02	0.32	0.35	0.02	0.09	0.11	—	1,260	1,260	0.12	0.20	2.65	1,325
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.90	6.90	< 0.005	< 0.005	0.01	7.25
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.14	1.14	< 0.005	< 0.005	< 0.005	1.20

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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
Tree Removal	Linear, Grubbing & Land Clearing	11/1/2024	11/2/2024	6.00	2.00	—
Excavation	Linear, Grading & Excavation	7/1/2025	7/3/2025	6.00	3.00	—
Riprap Installation	Linear, Grading & Excavation	7/4/2025	7/7/2025	6.00	3.00	—
Soil-filled riprap	Linear, Grading & Excavation	7/8/2025	7/10/2025	6.00	3.00	—
Aggregate Base	Linear, Grading & Excavation	7/11/2025	7/14/2025	6.00	3.00	—
Material fill	Linear, Grading & Excavation	7/15/2025	7/17/2025	6.00	3.00	—
Planting, Monitoring and Maintenance	Linear, Grading & Excavation	6/1/2026	6/8/2026	6.00	7.00	—
Asphalt	Linear, Paving	7/18/2025	7/19/2025	6.00	2.00	—

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
Tree Removal	Excavators	Diesel	Average	1.00	11.0	36.0	0.38
Tree Removal	Tractors/Loaders/Backh	Diesel	Average	1.00	11.0	84.0	0.37
Excavation	Excavators	Diesel	Average	3.00	11.0	36.0	0.38
Excavation	Rubber Tired Dozers	Diesel	Average	2.00	11.0	367	0.40
Excavation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.37
Excavation	Graders	Diesel	Average	1.00	11.0	148	0.41
Excavation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	11.0	84.0	0.37
Excavation	Crawler Tractors	Diesel	Average	1.00	11.0	87.0	0.43
Excavation	Other Construction Equipment	Diesel	Average	1.00	11.0	82.0	0.42
Riprap Installation	Excavators	Diesel	Average	3.00	11.0	36.0	0.38
Riprap Installation	Rubber Tired Dozers	Diesel	Average	2.00	11.0	367	0.40
Riprap Installation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.37
Riprap Installation	Graders	Diesel	Average	1.00	11.0	148	0.41
Riprap Installation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	11.0	84.0	0.37
Riprap Installation	Crawler Tractors	Diesel	Average	1.00	11.0	87.0	0.43
Riprap Installation	Other Construction Equipment	Diesel	Average	1.00	11.0	82.0	0.42
Soil-filled riprap	Excavators	Diesel	Average	3.00	11.0	36.0	0.38
Soil-filled riprap	Rubber Tired Dozers	Diesel	Average	2.00	11.0	367	0.40
Soil-filled riprap	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.38
Soil-filled riprap	Graders	Diesel	Average	1.00	11.0	148	0.41
Soil-filled riprap	Tractors/Loaders/Backhoes	Diesel	Average	2.00	11.0	84.0	0.37
Soil-filled riprap	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	235	0.37
Soil-filled riprap	Skid Steer Loaders	Diesel	Average	2.00	11.0	56.0	0.37
Soil-filled riprap	Cranes	Diesel	Average	1.00	11.0	80.0	0.29
Soil-filled riprap	Other Construction Equipment	Diesel	Average	1.00	11.0	82.0	0.42
Aggregate Base	Excavators	Diesel	Average	3.00	11.0	472	0.38
Aggregate Base	Rubber Tired Dozers	Diesel	Average	2.00	11.0	367	0.40
Aggregate Base	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.38

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Aggregate Base	Graders	Diesel	Average	1.00	11.0	148	0.41
Aggregate Base	Tractors/Loaders/Backhoes	Diesel	Average	2.00	11.0	84.0	0.37
Aggregate Base	Crawler Tractors	Diesel	Average	1.00	11.0	87.0	0.43
Aggregate Base	Skid Steer Loaders	Diesel	Average	2.00	11.0	71.0	0.37
Material fill	Excavators	Diesel	Average	3.00	11.0	472	0.38
Material fill	Rubber Tired Dozers	Diesel	Average	2.00	11.0	367	0.40
Material fill	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.38
Material fill	Graders	Diesel	Average	1.00	11.0	148	0.41
Material fill	Tractors/Loaders/Backhoes	Diesel	Average	2.00	11.0	84.0	0.37
Material fill	Crawler Tractors	Diesel	Average	1.00	11.0	87.0	0.43
Material fill	Other Construction Equipment	Diesel	Average	1.00	11.0	82.0	0.42
Asphalt	Pavers	Diesel	Average	1.00	11.0	81.0	0.42
Asphalt	Paving Equipment	Diesel	Average	1.00	11.0	89.0	0.36

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Tree Removal	Excavators	Diesel	Tier 4 Final	1.00	11.0	36.0	0.38
Tree Removal	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	11.0	84.0	0.37
Excavation	Excavators	Diesel	Tier 4 Final	3.00	11.0	36.0	0.38
Excavation	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	11.0	367	0.40
Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
Excavation	Graders	Diesel	Tier 4 Final	1.00	11.0	148	0.41
Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
Excavation	Crawler Tractors	Diesel	Tier 4 Final	1.00	11.0	87.0	0.43
Excavation	Other Construction Equipment	Diesel	Tier 4 Final	1.00	11.0	82.0	0.42
Riprap Installation	Excavators	Diesel	Tier 4 Final	3.00	11.0	36.0	0.38
Riprap Installation	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	11.0	367	0.40
Riprap Installation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
Riprap Installation	Graders	Diesel	Tier 4 Final	1.00	11.0	148	0.41
Riprap Installation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
Riprap Installation	Crawler Tractors	Diesel	Tier 4 Final	1.00	11.0	87.0	0.43

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Riprap Installation	Other Construction Equipment	Diesel	Tier 4 Final	1.00	11.0	82.0	0.42
Soil-filled riprap	Excavators	Diesel	Tier 4 Final	3.00	11.0	36.0	0.38
Soil-filled riprap	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	11.0	367	0.40
Soil-filled riprap	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	11.0	84.0	0.38
Soil-filled riprap	Graders	Diesel	Tier 4 Final	1.00	11.0	148	0.41
Soil-filled riprap	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.37
Soil-filled riprap	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	11.0	84.0	0.37
Soil-filled riprap	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	11.0	235	0.37
Soil-filled riprap	Skid Steer Loaders	Diesel	Tier 4 Final	2.00	11.0	56.0	0.37
Soil-filled riprap	Cranes	Diesel	Tier 4 Final	1.00	11.0	80.0	0.29
Soil-filled riprap	Other Construction Equipment	Diesel	Tier 4 Final	1.00	11.0	82.0	0.42
Aggregate Base	Excavators	Diesel	Tier 4 Final	3.00	11.0	472	0.38
Aggregate Base	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	11.0	367	0.40
Aggregate Base	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.38
Aggregate Base	Graders	Diesel	Tier 4 Final	1.00	11.0	148	0.41
Aggregate Base	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
Aggregate Base	Crawler Tractors	Diesel	Tier 4 Final	1.00	11.0	87.0	0.43
Aggregate Base	Skid Steer Loaders	Diesel	Tier 4 Final	2.00	11.0	71.0	0.37
Material fill	Excavators	Diesel	Tier 4 Final	3.00	11.0	472	0.38
Material fill	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	11.0	367	0.40
Material fill	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.38
Material fill	Graders	Diesel	Tier 4 Final	1.00	11.0	148	0.41
Material fill	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	84.0	0.37
Material fill	Crawler Tractors	Diesel	Tier 4 Final	1.00	11.0	87.0	0.43
Material fill	Other Construction Equipment	Diesel	Tier 4 Final	1.00	11.0	82.0	0.42
Asphalt	Pavers	Diesel	Average	1.00	11.0	81.0	0.42
Asphalt	Paving Equipment	Diesel	Average	1.00	11.0	89.0	0.36

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Tree Removal	—	—	—	—
Tree Removal	Worker	20.0	10.0	LDA,LDT1,LDT2
Tree Removal	Vendor	0.00	7.10	HHDT,MHDT
Tree Removal	Hauling	21.0	30.0	HHDT
Tree Removal	Onsite truck	0.00	—	HHDT
Excavation	—	—	—	—
Excavation	Worker	122	10.0	LDA,LDT1,LDT2
Excavation	Vendor	0.00	7.10	HHDT,MHDT
Excavation	Hauling	325	30.0	HHDT
Excavation	Onsite truck	—	—	HHDT
Riprap Installation	—	—	—	—
Riprap Installation	Worker	0.00	0.00	LDA,LDT1,LDT2
Riprap Installation	Vendor	0.00	7.10	HHDT,MHDT
Riprap Installation	Hauling	218	100	HHDT
Riprap Installation	Onsite truck	—	—	HHDT
Soil-filled riprap	—	—	—	—
Soil-filled riprap	Worker	0.00	12.4	LDA,LDT1,LDT2
Soil-filled riprap	Vendor	0.00	7.10	HHDT,MHDT
Soil-filled riprap	Hauling	156	100	HHDT
Soil-filled riprap	Onsite truck	—	—	HHDT
Aggregate Base	—	—	—	—
Aggregate Base	Worker	0.00	12.4	LDA,LDT1,LDT2
Aggregate Base	Vendor	0.00	7.10	HHDT,MHDT
Aggregate Base	Hauling	169	100	HHDT
Aggregate Base	Onsite truck	—	—	HHDT
Material fill	—	—	—	—
Material fill	Worker	0.00	12.4	LDA,LDT1,LDT2
Material fill	Vendor	0.00	7.10	HHDT,MHDT
Material fill	Hauling	237	100	HHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Material fill	Onsite truck	—	—	HHDT
Planting, Monitoring and Maintenance	—	—	—	—
Planting, Monitoring and Maintenance	Worker	20.0	10.0	LDA,LDT1,LDT2
Planting, Monitoring and Maintenance	Vendor	0.00	7.10	HHDT,MHDT
Planting, Monitoring and Maintenance	Hauling	0.00	20.0	HHDT
Planting, Monitoring and Maintenance	Onsite truck	—	—	HHDT
Asphalt	—	—	—	—
Asphalt	Worker	0.00	12.4	LDA,LDT1,LDT2
Asphalt	Vendor	0.00	7.10	HHDT,MHDT
Asphalt	Hauling	17.0	20.0	HHDT
Asphalt	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Tree Removal	—	—	—	—
Tree Removal	Worker	20.0	10.0	LDA,LDT1,LDT2
Tree Removal	Vendor	0.00	7.10	HHDT,MHDT
Tree Removal	Hauling	21.0	30.0	HHDT
Tree Removal	Onsite truck	0.00	—	HHDT
Excavation	—	—	—	—
Excavation	Worker	122	10.0	LDA,LDT1,LDT2
Excavation	Vendor	0.00	7.10	HHDT,MHDT
Excavation	Hauling	325	30.0	HHDT
Excavation	Onsite truck	—	—	HHDT
Riprap Installation	—	—	—	—
Riprap Installation	Worker	0.00	0.00	LDA,LDT1,LDT2
Riprap Installation	Vendor	0.00	7.10	HHDT,MHDT
Riprap Installation	Hauling	218	100	HHDT
Riprap Installation	Onsite truck	—	—	HHDT
Soil-filled riprap	—	—	—	—
Soil-filled riprap	Worker	0.00	12.4	LDA,LDT1,LDT2
Soil-filled riprap	Vendor	0.00	7.10	HHDT,MHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Soil-filled riprap	Hauling	156	100	HHDT
Soil-filled riprap	Onsite truck	—	—	HHDT
Aggregate Base	—	—	—	—
Aggregate Base	Worker	0.00	12.4	LDA,LDT1,LDT2
Aggregate Base	Vendor	0.00	7.10	HHDT,MHDT
Aggregate Base	Hauling	169	100	HHDT
Aggregate Base	Onsite truck	—	—	HHDT
Material fill	—	—	—	—
Material fill	Worker	0.00	12.4	LDA,LDT1,LDT2
Material fill	Vendor	0.00	7.10	HHDT,MHDT
Material fill	Hauling	237	100	HHDT
Material fill	Onsite truck	—	—	HHDT
Planting, Monitoring and Maintenance	—	—	—	—
Planting, Monitoring and Maintenance	Worker	20.0	10.0	LDA,LDT1,LDT2
Planting, Monitoring and Maintenance	Vendor	0.00	7.10	HHDT,MHDT
Planting, Monitoring and Maintenance	Hauling	0.00	20.0	HHDT
Planting, Monitoring and Maintenance	Onsite truck	—	—	HHDT
Asphalt	—	—	—	—
Asphalt	Worker	0.00	12.4	LDA,LDT1,LDT2
Asphalt	Vendor	0.00	7.10	HHDT,MHDT
Asphalt	Hauling	17.0	20.0	HHDT
Asphalt	Onsite truck	—	—	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 (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Tree Removal	0.00	333	7.40	0.00	—
Excavation	0.00	7,790	7.40	0.00	—
Riprap Installation	5,227	0.00	7.40	0.00	—
Soil-filled riprap	3,745	0.00	7.40	0.00	—
Aggregate Base	4,044	0.00	7.40	0.00	—
Material fill	5,690	0.00	7.40	0.00	—
Planting, Monitoring and Maintenance	0.00	0.00	0.00	0.00	—
Asphalt	270	0.00	7.40	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
User Defined Linear	7.40	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	375	0.01	< 0.005
2025	0.00	375	0.01	< 0.005
2026	0.00	375	0.01	< 0.005

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	19.9	annual days of extreme heat
Extreme Precipitation	6.45	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	1	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	1	1	1	2
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	47.0
AQ-PM	38.3
AQ-DPM	66.4
Drinking Water	16.8
Lead Risk Housing	59.9
Pesticides	1.52
Toxic Releases	32.2
Traffic	44.2
Effect Indicators	—
CleanUp Sites	4.12
Groundwater	2.11
Haz Waste Facilities/Generators	30.2
Impaired Water Bodies	66.7
Solid Waste	24.8
Sensitive Population	—
Asthma	26.5
Cardio-vascular	20.9
Low Birth Weights	21.4
Socioeconomic Factor Indicators	—
Education	0.96
Housing	8.86
Linguistic	12.3
Poverty	19.1
Unemployment	48.3

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	88.75914282
Employed	68.38188118
Median HI	82.12498396
Education	—
Bachelor's or higher	93.21185679
High school enrollment	100
Preschool enrollment	71.32041576
Transportation	—
Auto Access	42.10188631
Active commuting	59.05299628
Social	—
2-parent households	69.28012319
Voting	99.39689465
Neighborhood	—
Alcohol availability	71.62838445
Park access	81.35506224
Retail density	33.56858719
Supermarket access	25.79237777
Tree canopy	95.49595791
Housing	—
Homeownership	72.09033748
Housing habitability	86.59052996
Low-inc homeowner severe housing cost burden	92.78839985
Low-inc renter severe housing cost burden	59.05299628
Uncrowded housing	70.21686129
Health Outcomes	—
Insured adults	90.63261902
Arthritis	15.0
Asthma ER Admissions	63.7

Indicator	Result for Project Census Tract
High Blood Pressure	12.4
Cancer (excluding skin)	4.6
Asthma	72.9
Coronary Heart Disease	31.2
Chronic Obstructive Pulmonary Disease	68.2
Diagnosed Diabetes	82.1
Life Expectancy at Birth	43.8
Cognitively Disabled	76.7
Physically Disabled	59.0
Heart Attack ER Admissions	50.6
Mental Health Not Good	91.8
Chronic Kidney Disease	45.1
Obesity	70.2
Pedestrian Injuries	80.1
Physical Health Not Good	85.2
Stroke	58.2
Health Risk Behaviors	—
Binge Drinking	38.6
Current Smoker	90.3
No Leisure Time for Physical Activity	96.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	31.0
Elderly	15.7
English Speaking	91.4
Foreign-born	2.6
Outdoor Workers	78.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	74.6
Traffic Density	37.2
Traffic Access	23.0
Other Indices	—

Indicator	Result for Project Census Tract
Hardship	19.0
Other Decision Support	—
2016 Voting	99.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	10.0
Healthy Places Index Score for Project Location (b)	90.0
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 phasing provided by USACE.
Construction: Off-Road Equipment	Construction equipment provided by USACE.
Construction: Dust From Material Movement	Material quantities provided from USACE.
Construction: Trips and VMT	Number of workers and trip length provided by USACE.
Construction: On-Road Fugitive Dust	Conservative assumptions given the linear feet of construction and possible haul routes.

American River Contract 4A Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	American River Contract 4A
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	36.4
Location	38.59402698581977, -121.47204243565967
County	Sacramento
City	Sacramento
Air District	Sacramento Metropolitan AQMD
Air Basin	Sacramento Valley
TAZ	521
EDFZ	13
Electric Utility	Sacramento Municipal Utility District
Gas Utility	Pacific Gas & Electric

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
User Defined Linear	2.00	Mile	5.00	0.00	—	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	11.8	4.44	142	71.7	0.52	2.13	559	562	2.07	60.3	62.3	—	82,236	82,236	7.18	11.8	161	86,090
Mit.	9.64	2.73	127	89.0	0.52	1.49	558	559	1.49	59.5	61.0	—	82,236	82,236	7.18	11.8	161	86,090
% Reduced	18%	39%	10%	-24%	—	30%	< 0.5%	< 0.5%	28%	1%	2%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.82	0.38	9.60	5.09	0.03	0.17	33.4	33.5	0.16	3.88	4.04	—	4,839	4,839	0.42	0.69	4.23	5,059
Mit.	0.60	0.19	7.89	5.40	0.03	0.09	32.8	32.9	0.09	3.62	3.70	—	4,839	4,839	0.42	0.69	4.23	5,059
% Reduced	27%	49%	18%	-6%	—	49%	2%	2%	47%	7%	8%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.15	0.07	1.75	0.93	0.01	0.03	6.09	6.12	0.03	0.71	0.74	—	801	801	0.07	0.11	0.70	838
Mit.	0.11	0.04	1.44	0.99	0.01	0.02	5.99	6.01	0.02	0.66	0.68	—	801	801	0.07	0.11	0.70	838

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
% Reduced	27%	49%	18%	-6%	—	49%	2%	2%	47%	7%	8%	—	—	—	—	—	—	—

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	11.8	4.44	142	71.7	0.52	2.13	559	562	2.07	60.3	62.3	—	82,236	82,236	7.18	11.8	161	86,090
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.82	0.38	9.60	5.09	0.03	0.17	33.4	33.5	0.16	3.88	4.04	—	4,839	4,839	0.42	0.69	4.23	5,059
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.15	0.07	1.75	0.93	0.01	0.03	6.09	6.12	0.03	0.71	0.74	—	801	801	0.07	0.11	0.70	838

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	9.64	2.73	127	89.0	0.52	1.49	558	559	1.49	59.5	61.0	—	82,236	82,236	7.18	11.8	161	86,090
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.60	0.19	7.89	5.40	0.03	0.09	32.8	32.9	0.09	3.62	3.70	—	4,839	4,839	0.42	0.69	4.23	5,059

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.11	0.04	1.44	0.99	0.01	0.02	5.99	6.01	0.02	0.66	0.68	—	801	801	0.07	0.11	0.70	838

3. Construction Emissions Details

3.1. Linear, Grubbing & Land Clearing (2025) - 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 Equipmen	2.88	2.42	18.4	20.1	0.07	0.78	—	0.78	0.72	—	0.72	—	7,408	7,408	0.30	0.06	—	7,433
Dust From Material Movemen	—	—	—	—	—	—	2.82	2.82	—	1.31	1.31	—	—	—	—	—	—	—
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 Equipmen	0.06	0.05	0.35	0.39	< 0.005	0.02	—	0.02	0.01	—	0.01	—	142	142	0.01	< 0.005	—	143
Dust From Material Movemen	—	—	—	—	—	—	0.05	0.05	—	0.03	0.03	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	0.01	0.01	0.06	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	8.41	1.53	124	46.1	0.45	1.35	556	557	1.35	58.8	60.1	—	73,853	73,853	6.86	11.7	158	77,666
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.0	17.0	< 0.005	< 0.005	0.03	17.3
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	0.16	0.03	2.52	0.89	0.01	0.03	10.7	10.7	0.03	1.13	1.15	—	1,416	1,416	0.13	0.22	1.31	1,488
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.82	2.82	< 0.005	< 0.005	0.01	2.87
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	0.03	0.01	0.46	0.16	< 0.005	< 0.005	1.94	1.95	< 0.005	0.21	0.21	—	234	234	0.02	0.04	0.22	246

3.2. Linear, Grubbing & Land Clearing (2025) - 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 Equipmen	0.70	0.70	3.66	37.4	0.07	0.14	—	0.14	0.14	—	0.14	—	7,408	7,408	0.30	0.06	—	7,433
Dust From Material Movemen	—	—	—	—	—	—	1.10	1.10	—	0.51	0.51	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.07	0.72	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	142	142	0.01	< 0.005	—	143
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	8.41	1.53	124	46.1	0.45	1.35	556	557	1.35	58.8	60.1	—	73,853	73,853	6.86	11.7	158	77,666
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.0	17.0	< 0.005	< 0.005	0.03	17.3
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	0.16	0.03	2.52	0.89	0.01	0.03	10.7	10.7	0.03	1.13	1.15	—	1,416	1,416	0.13	0.22	1.31	1,488
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.82	2.82	< 0.005	< 0.005	0.01	2.87
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	0.03	0.01	0.46	0.16	< 0.005	< 0.005	1.94	1.95	< 0.005	0.21	0.21	—	234	234	0.02	0.04	0.22	246

3.3. Linear, Grubbing & Land Clearing (2025) - 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 Equipmen	1.75	1.47	14.0	13.0	0.02	0.61	—	0.61	0.56	—	0.56	—	2,294	2,294	0.09	0.02	—	2,302
Dust From Material Movemen	—	—	—	—	—	—	9.02	9.02	—	4.63	4.63	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.01	0.01	0.08	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.6	12.6	< 0.005	< 0.005	—	12.6
Dust From Material Movemen	—	—	—	—	—	—	0.05	0.05	—	0.03	0.03	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.08	2.08	< 0.005	< 0.005	—	2.09
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	0.36	0.07	5.28	2.01	0.02	0.06	22.6	22.7	0.06	2.39	2.45	—	3,033	3,033	0.29	0.48	6.42	3,190
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
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	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	16.6	16.6	< 0.005	< 0.005	0.02	17.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.75	2.75	< 0.005	< 0.005	< 0.005	2.89

3.4. Linear, Grubbing & Land Clearing (2025) - 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 Equipmen	0.22	0.22	1.12	12.0	0.02	0.04	—	0.04	0.04	—	0.04	—	2,294	2,294	0.09	0.02	—	2,302
Dust From Material Movemen	—	—	—	—	—	—	3.52	3.52	—	1.81	1.81	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.6	12.6	< 0.005	< 0.005	—	12.6
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.08	2.08	< 0.005	< 0.005	—	2.09
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	0.36	0.07	5.28	2.01	0.02	0.06	22.6	22.7	0.06	2.39	2.45	—	3,033	3,033	0.29	0.48	6.42	3,190
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
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	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	16.6	16.6	< 0.005	< 0.005	0.02	17.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.75	2.75	< 0.005	< 0.005	< 0.005	2.89

3.5. Linear, Grubbing & Land Clearing (2025) - 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 Equipmen	0.16	0.13	1.14	1.40	< 0.005	0.04	—	0.04	0.03	—	0.03	—	195	195	0.01	< 0.005	—	195
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.07	1.07	< 0.005	< 0.005	—	1.07
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	0.07	0.01	0.96	0.37	< 0.005	0.01	4.12	4.13	0.01	0.44	0.45	—	552	552	0.05	0.09	1.17	580
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	3.02	3.02	< 0.005	< 0.005	< 0.005	3.17
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.53

3.6. Linear, Grubbing & Land Clearing (2025) - 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 Equipmen	0.03	0.03	0.91	1.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	195	195	0.01	< 0.005	—	195
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.07	1.07	< 0.005	< 0.005	—	1.07
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	0.07	0.01	0.96	0.37	< 0.005	0.01	4.12	4.13	0.01	0.44	0.45	—	552	552	0.05	0.09	1.17	580
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	3.02	3.02	< 0.005	< 0.005	< 0.005	3.17
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.53

3.7. Linear, Grading & Excavation (2025) - 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 Equipmen	1.95	1.63	15.2	13.1	0.02	0.74	—	0.74	0.68	—	0.68	—	2,274	2,274	0.09	0.02	—	2,282
Dust From Material Movemen	—	—	—	—	—	—	9.05	9.05	—	4.64	4.64	—	—	—	—	—	—	—
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 Equipmen	0.05	0.04	0.38	0.32	< 0.005	0.02	—	0.02	0.02	—	0.02	—	56.1	56.1	< 0.005	< 0.005	—	56.3
Dust From Material Movemen	—	—	—	—	—	—	0.22	0.22	—	0.11	0.11	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.01	0.01	0.07	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.28	9.28	< 0.005	< 0.005	—	9.31
Dust From Material Movemen	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	3.40	0.60	49.9	18.5	0.19	0.55	228	229	0.55	24.1	24.7	—	30,233	30,233	2.79	4.79	64.7	31,793
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.9	21.9	< 0.005	< 0.005	0.04	22.3
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	0.08	0.01	1.31	0.46	< 0.005	0.01	5.62	5.63	0.01	0.59	0.61	—	745	745	0.07	0.12	0.69	783
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.63	3.63	< 0.005	< 0.005	0.01	3.68
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	0.02	< 0.005	0.24	0.08	< 0.005	< 0.005	1.03	1.03	< 0.005	0.11	0.11	—	123	123	0.01	0.02	0.11	130

3.8. Linear, Grading & Excavation (2025) - 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 Equipmen	0.21	0.21	1.19	11.9	0.02	0.04	—	0.04	0.04	—	0.04	—	2,274	2,274	0.09	0.02	—	2,282
Dust From Material Movemen	—	—	—	—	—	—	3.53	3.53	—	1.81	1.81	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.03	0.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.1	56.1	< 0.005	< 0.005	—	56.3
Dust From Material Movemen	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.28	9.28	< 0.005	< 0.005	—	9.31
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	3.40	0.60	49.9	18.5	0.19	0.55	228	229	0.55	24.1	24.7	—	30,233	30,233	2.79	4.79	64.7	31,793
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.9	21.9	< 0.005	< 0.005	0.04	22.3
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	0.08	0.01	1.31	0.46	< 0.005	0.01	5.62	5.63	0.01	0.59	0.61	—	745	745	0.07	0.12	0.69	783
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.63	3.63	< 0.005	< 0.005	0.01	3.68
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	0.02	< 0.005	0.24	0.08	< 0.005	< 0.005	1.03	1.03	< 0.005	0.11	0.11	—	123	123	0.01	0.02	0.11	130

3.9. Linear, Grading & Excavation (2025) - 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 Equipmen	2.09	1.76	16.3	14.3	0.02	0.77	—	0.77	0.71	—	0.71	—	2,451	2,451	0.10	0.02	—	2,459
Dust From Material Movemen	—	—	—	—	—	—	9.02	9.02	—	4.63	4.63	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.01	0.01	0.09	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5
Dust From Material Movemen	—	—	—	—	—	—	0.05	0.05	—	0.03	0.03	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.22	2.22	< 0.005	< 0.005	—	2.23
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	0.67	0.12	9.92	3.68	0.04	0.11	45.3	45.4	0.11	4.79	4.90	—	6,002	6,002	0.55	0.95	12.8	6,312
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
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	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.25	0.25	< 0.005	0.03	0.03	—	32.9	32.9	< 0.005	0.01	0.03	34.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	5.44	5.44	< 0.005	< 0.005	0.01	5.72

3.10. Linear, Grading & Excavation (2025) - 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 Equipmen	0.24	0.24	2.02	13.1	0.02	0.05	—	0.05	0.05	—	0.05	—	2,451	2,451	0.10	0.02	—	2,459
Dust From Material Movemen	—	—	—	—	—	—	3.52	3.52	—	1.81	1.81	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.22	2.22	< 0.005	< 0.005	—	2.23
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	0.67	0.12	9.92	3.68	0.04	0.11	45.3	45.4	0.11	4.79	4.90	—	6,002	6,002	0.55	0.95	12.8	6,312
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
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	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.25	0.25	< 0.005	0.03	0.03	—	32.9	32.9	< 0.005	0.01	0.03	34.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	5.44	5.44	< 0.005	< 0.005	0.01	5.72

3.11. Linear, Grading & Excavation (2025) - 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 Equipmen	2.09	1.76	16.3	14.3	0.02	0.77	—	0.77	0.71	—	0.71	—	2,451	2,451	0.10	0.02	—	2,459
Dust From Material Movemen	—	—	—	—	—	—	9.02	9.02	—	4.63	4.63	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.09	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5
Dust From Material Movemen	—	—	—	—	—	—	0.05	0.05	—	0.03	0.03	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.22	2.22	< 0.005	< 0.005	—	2.23
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	1.00	0.18	14.7	5.46	0.05	0.16	67.2	67.4	0.16	7.11	7.27	—	8,912	8,912	0.82	1.41	19.1	9,372
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
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	0.01	< 0.005	0.09	0.03	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	48.8	48.8	< 0.005	0.01	0.05	51.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	8.08	8.08	< 0.005	< 0.005	0.01	8.49

3.12. Linear, Grading & Excavation (2025) - 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 Equipmen	0.24	0.24	2.02	13.1	0.02	0.05	—	0.05	0.05	—	0.05	—	2,451	2,451	0.10	0.02	—	2,459
Dust From Material Movemen	—	—	—	—	—	—	3.52	3.52	—	1.81	1.81	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.22	2.22	< 0.005	< 0.005	—	2.23
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	1.00	0.18	14.7	5.46	0.05	0.16	67.2	67.4	0.16	7.11	7.27	—	8,912	8,912	0.82	1.41	19.1	9,372
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
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	0.01	< 0.005	0.09	0.03	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	48.8	48.8	< 0.005	0.01	0.05	51.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	8.08	8.08	< 0.005	< 0.005	0.01	8.49

3.13. Linear, Grading & Excavation (2025) - 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 Equipmen	1.93	1.62	15.1	12.9	0.02	0.73	—	0.73	0.67	—	0.67	—	2,256	2,256	0.09	0.02	—	2,264
Dust From Material Movemen	—	—	—	—	—	—	9.07	9.07	—	4.64	4.64	—	—	—	—	—	—	—
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 Equipmen	0.04	0.04	0.33	0.28	< 0.005	0.02	—	0.02	0.01	—	0.01	—	49.5	49.5	< 0.005	< 0.005	—	49.6
Dust From Material Movemen	—	—	—	—	—	—	0.20	0.20	—	0.10	0.10	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.01	0.01	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.19	8.19	< 0.005	< 0.005	—	8.22
Dust From Material Movemen	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	4.65	0.82	68.4	25.4	0.25	0.75	312	313	0.75	33.0	33.8	—	41,378	41,378	3.82	6.55	88.6	43,514
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.5	19.5	< 0.005	< 0.005	0.04	19.8
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	0.10	0.02	1.59	0.56	0.01	0.02	6.84	6.85	0.02	0.72	0.74	—	907	907	0.08	0.14	0.84	953
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.23	3.23	< 0.005	< 0.005	0.01	3.27
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	0.02	< 0.005	0.29	0.10	< 0.005	< 0.005	1.25	1.25	< 0.005	0.13	0.13	—	150	150	0.01	0.02	0.14	158

3.14. Linear, Grading & Excavation (2025) - 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 Equipmen	0.21	0.21	1.10	11.8	0.02	0.04	—	0.04	0.04	—	0.04	—	2,256	2,256	0.09	0.02	—	2,264
Dust From Material Movemen	—	—	—	—	—	—	3.54	3.54	—	1.81	1.81	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	49.5	49.5	< 0.005	< 0.005	—	49.6
Dust From Material Movemen	—	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.19	8.19	< 0.005	< 0.005	—	8.22
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	4.65	0.82	68.4	25.4	0.25	0.75	312	313	0.75	33.0	33.8	—	41,378	41,378	3.82	6.55	88.6	43,514
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.5	19.5	< 0.005	< 0.005	0.04	19.8
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	0.10	0.02	1.59	0.56	0.01	0.02	6.84	6.85	0.02	0.72	0.74	—	907	907	0.08	0.14	0.84	953
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.23	3.23	< 0.005	< 0.005	0.01	3.27
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	0.02	< 0.005	0.29	0.10	< 0.005	< 0.005	1.25	1.25	< 0.005	0.13	0.13	—	150	150	0.01	0.02	0.14	158

3.15. Linear, Grading & Excavation (2025) - 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 Equipmen	0.54	0.46	2.81	3.01	0.01	0.11	—	0.11	0.10	—	0.10	—	1,285	1,285	0.05	0.01	—	1,289
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.04	7.04	< 0.005	< 0.005	—	7.07
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.17	1.17	< 0.005	< 0.005	—	1.17
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	0.04	0.01	0.60	0.22	< 0.005	0.01	2.74	2.75	0.01	0.29	0.30	—	364	364	0.03	0.06	0.78	383
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.99	1.99	< 0.005	< 0.005	< 0.005	2.09
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.35

3.16. Linear, Grading & Excavation (2025) - 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 Equipmen	0.12	0.12	0.63	6.35	0.01	0.02	—	0.02	0.02	—	0.02	—	1,285	1,285	0.05	0.01	—	1,289
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.04	7.04	< 0.005	< 0.005	—	7.07
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.17	1.17	< 0.005	< 0.005	—	1.17
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	0.04	0.01	0.60	0.22	< 0.005	0.01	2.74	2.75	0.01	0.29	0.30	—	364	364	0.03	0.06	0.78	383
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.99	1.99	< 0.005	< 0.005	< 0.005	2.09
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.35

3.17. Linear, Grading & Excavation (2025) - 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 Equipmen	0.54	0.46	2.81	3.01	0.01	0.11	—	0.11	0.10	—	0.10	—	1,285	1,285	0.05	0.01	—	1,289
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.04	7.04	< 0.005	< 0.005	—	7.07
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.17	1.17	< 0.005	< 0.005	—	1.17
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	0.04	0.01	0.60	0.22	< 0.005	0.01	2.74	2.75	0.01	0.29	0.30	—	364	364	0.03	0.06	0.78	383
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.99	1.99	< 0.005	< 0.005	< 0.005	2.09
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.35

3.18. Linear, Grading & Excavation (2025) - 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 Equipmen	0.12	0.12	0.63	6.35	0.01	0.02	—	0.02	0.02	—	0.02	—	1,285	1,285	0.05	0.01	—	1,289
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.04	7.04	< 0.005	< 0.005	—	7.07
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.17	1.17	< 0.005	< 0.005	—	1.17
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	0.04	0.01	0.60	0.22	< 0.005	0.01	2.74	2.75	0.01	0.29	0.30	—	364	364	0.03	0.06	0.78	383
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.99	1.99	< 0.005	< 0.005	< 0.005	2.09
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.35

3.19. Linear, Grading & Excavation (2025) - 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 Equipmen	0.65	0.55	3.82	4.50	0.02	0.15	—	0.15	0.14	—	0.14	—	2,029	2,029	0.08	0.02	—	2,036
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.1	11.1	< 0.005	< 0.005	—	11.2
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.84	1.84	< 0.005	< 0.005	—	1.85
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.09	0.08	0.04	0.89	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	160	160	< 0.005	0.01	0.61	162
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.81
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.13
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

3.20. Linear, Grading & Excavation (2025) - 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 Equipmen	0.19	0.19	1.00	10.0	0.02	0.04	—	0.04	0.04	—	0.04	—	2,029	2,029	0.08	0.02	—	2,036
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.1	11.1	< 0.005	< 0.005	—	11.2
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.84	1.84	< 0.005	< 0.005	—	1.85
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.04	0.89	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	160	160	< 0.005	0.01	0.61	162
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.81
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.13
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

3.21. Linear, Grading & Excavation (2025) - 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 Equipmen	0.39	0.33	2.85	2.87	< 0.005	0.19	—	0.19	0.18	—	0.18	—	397	397	0.02	< 0.005	—	398
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.01	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.44	5.44	< 0.005	< 0.005	—	5.46
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.90	0.90	< 0.005	< 0.005	—	0.90
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	1.08	0.20	15.9	5.92	0.06	0.17	71.4	71.5	0.17	7.54	7.72	—	9,481	9,481	0.88	1.50	20.2	9,971
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.4
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	0.01	< 0.005	0.23	0.08	< 0.005	< 0.005	0.98	0.98	< 0.005	0.10	0.11	—	130	130	0.01	0.02	0.12	136
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.02	2.02	< 0.005	< 0.005	< 0.005	2.05
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	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.18	0.18	< 0.005	0.02	0.02	—	21.5	21.5	< 0.005	< 0.005	0.02	22.6

3.22. Linear, Grading & Excavation (2025) - 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 Equipmen	0.04	0.04	0.34	2.78	< 0.005	0.01	—	0.01	0.01	—	0.01	—	397	397	0.02	< 0.005	—	398
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.44	5.44	< 0.005	< 0.005	—	5.46
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.90	0.90	< 0.005	< 0.005	—	0.90
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	1.08	0.20	15.9	5.92	0.06	0.17	71.4	71.5	0.17	7.54	7.72	—	9,481	9,481	0.88	1.50	20.2	9,971
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.4
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	0.01	< 0.005	0.23	0.08	< 0.005	< 0.005	0.98	0.98	< 0.005	0.10	0.11	—	130	130	0.01	0.02	0.12	136
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.02	2.02	< 0.005	< 0.005	< 0.005	2.05
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	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.18	0.18	< 0.005	0.02	0.02	—	21.5	21.5	< 0.005	< 0.005	0.02	22.6

3.23. Linear, Grading & Excavation (2025) - 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 Equipmen	0.16	0.13	1.14	1.40	< 0.005	0.04	—	0.04	0.03	—	0.03	—	195	195	0.01	< 0.005	—	195
Dust From Material Movemen	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.20	3.20	< 0.005	< 0.005	—	3.21
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.53	0.53	< 0.005	< 0.005	—	0.53
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	1.32	0.26	19.3	7.36	0.07	0.20	82.7	82.9	0.20	8.75	8.95	—	11,086	11,086	1.05	1.75	23.5	11,658
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.6	14.6	< 0.005	< 0.005	0.03	14.8
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	0.02	< 0.005	0.34	0.12	< 0.005	< 0.005	1.36	1.36	< 0.005	0.14	0.15	—	182	182	0.02	0.03	0.17	191
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.42	2.42	< 0.005	< 0.005	< 0.005	2.46
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	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.25	0.25	< 0.005	0.03	0.03	—	30.2	30.2	< 0.005	< 0.005	0.03	31.7

3.24. Linear, Grading & Excavation (2025) - 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 Equipmen	0.03	0.03	0.91	1.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	195	195	0.01	< 0.005	—	195
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.20	3.20	< 0.005	< 0.005	—	3.21
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.53	0.53	< 0.005	< 0.005	—	0.53
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	1.32	0.26	19.3	7.36	0.07	0.20	82.7	82.9	0.20	8.75	8.95	—	11,086	11,086	1.05	1.75	23.5	11,658
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.6	14.6	< 0.005	< 0.005	0.03	14.8
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	0.02	< 0.005	0.34	0.12	< 0.005	< 0.005	1.36	1.36	< 0.005	0.14	0.15	—	182	182	0.02	0.03	0.17	191
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.42	2.42	< 0.005	< 0.005	< 0.005	2.46
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	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.25	0.25	< 0.005	0.03	0.03	—	30.2	30.2	< 0.005	< 0.005	0.03	31.7

3.25. Linear, Drainage, Utilities, & Sub-Grade (2025) - 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 Equipmen	2.73	2.30	20.3	16.6	0.03	1.00	—	1.00	0.92	—	0.92	—	3,194	3,194	0.13	0.03	—	3,205
Dust From Material Movemen	—	—	—	—	—	—	9.37	9.37	—	4.67	4.67	—	—	—	—	—	—	—
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 Equipmen	0.07	0.06	0.50	0.41	< 0.005	0.02	—	0.02	0.02	—	0.02	—	78.7	78.7	< 0.005	< 0.005	—	79.0
Dust From Material Movemen	—	—	—	—	—	—	0.23	0.23	—	0.12	0.12	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.01	0.01	0.09	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.0	13.0	< 0.005	< 0.005	—	13.1
Dust From Material Movemen	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
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	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	3.76	0.69	55.3	20.6	0.20	0.60	249	249	0.60	26.3	26.9	—	33,053	33,053	3.07	5.23	70.6	34,760
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.9	21.9	< 0.005	< 0.005	0.04	22.3
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	0.09	0.02	1.45	0.51	0.01	0.01	6.13	6.14	0.01	0.65	0.66	—	815	815	0.08	0.13	0.75	856
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.63	3.63	< 0.005	< 0.005	0.01	3.68
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	0.02	< 0.005	0.26	0.09	< 0.005	< 0.005	1.12	1.12	< 0.005	0.12	0.12	—	135	135	0.01	0.02	0.12	142

3.26. Linear, Drainage, Utilities, & Sub-Grade (2025) - 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 Equipmen	0.29	0.29	1.52	16.3	0.03	0.06	—	0.06	0.06	—	0.06	—	3,194	3,194	0.13	0.03	—	3,205
Dust From Material Movemen	—	—	—	—	—	—	3.65	3.65	—	1.82	1.82	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.04	0.40	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	78.7	78.7	< 0.005	< 0.005	—	79.0
Dust From Material Movemen	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.0	13.0	< 0.005	< 0.005	—	13.1
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.53	0.49	0.27	5.43	0.00	0.00	0.86	0.86	0.00	0.20	0.20	—	975	975	0.02	0.04	3.72	990
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	3.76	0.69	55.3	20.6	0.20	0.60	249	249	0.60	26.3	26.9	—	33,053	33,053	3.07	5.23	70.6	34,760
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.9	21.9	< 0.005	< 0.005	0.04	22.3
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	0.09	0.02	1.45	0.51	0.01	0.01	6.13	6.14	0.01	0.65	0.66	—	815	815	0.08	0.13	0.75	856
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.63	3.63	< 0.005	< 0.005	0.01	3.68
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	0.02	< 0.005	0.26	0.09	< 0.005	< 0.005	1.12	1.12	< 0.005	0.12	0.12	—	135	135	0.01	0.02	0.12	142

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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
Temporary Bike Reroute	Linear, Grubbing & Land Clearing	7/1/2025	7/9/2025	5.00	7.00	—
Clearing and Grubbing	Linear, Grubbing & Land Clearing	7/10/2025	7/11/2025	6.00	2.00	—
Remove Asphalt	Linear, Grubbing & Land Clearing	7/12/2025	7/14/2025	6.00	2.00	—
Quarry Stone	Linear, Grading & Excavation	7/16/2025	7/25/2025	6.00	9.00	—
Choke Stone	Linear, Grading & Excavation	7/26/2025	7/28/2025	6.00	2.00	—
Aggregate Base	Linear, Grading & Excavation	7/29/2025	7/30/2025	6.00	2.00	—
Import Fill	Linear, Grading & Excavation	7/31/2025	8/11/2025	5.00	8.00	—
Geotextile Fabric	Linear, Grading & Excavation	8/12/2025	8/13/2025	5.00	2.00	—
Seeding and Mulching	Linear, Grading & Excavation	8/14/2025	8/15/2025	6.00	2.00	—
Demobilization	Linear, Grading & Excavation	8/16/2025	8/18/2025	6.00	2.00	—
Relocate Waterline	Linear, Grading & Excavation	8/19/2025	8/23/2025	6.00	5.00	—
Structural Excavation	Linear, Grading & Excavation	8/24/2025	8/30/2025	6.00	6.00	—
Permanent Bike Reoute	Linear, Drainage, Utilities, & Sub-Grade	8/31/2025	9/10/2025	6.00	9.00	—

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
Temporary Bike Reroute	Other General Industrial Equipment	Diesel	Average	1.00	4.30	83.0	0.34
Temporary Bike Reroute	Graders	Diesel	Average	1.00	3.00	148	0.41
Temporary Bike Reroute	Rubber Tired Dozers	Diesel	Average	1.00	3.00	367	0.40
Temporary Bike Reroute	Tractors/Loaders/Backhoes	Diesel	Average	6.00	5.70	430	0.37
Temporary Bike Reroute	Pavers	Diesel	Average	1.00	1.40	81.0	0.42
Temporary Bike Reroute	Cranes	Diesel	Average	1.00	1.40	367	0.29
Permanent Bike Reoute	Rubber Tired Dozers	Diesel	Average	2.00	5.50	367	0.40
Permanent Bike Reoute	Tractors/Loaders/Backhoes	Diesel	Average	1.00	2.20	84.0	0.37
Permanent Bike Reoute	Other General Industrial Equipment	Diesel	Average	1.00	4.40	83.0	0.37
Permanent Bike Reoute	Graders	Diesel	Average	1.00	4.30	148	0.41
Permanent Bike Reoute	Pavers	Diesel	Average	1.00	1.10	174	0.42
Permanent Bike Reoute	Off-Highway Trucks	Diesel	Average	1.00	2.20	265	0.38
Permanent Bike Reoute	Tractors/Loaders/Backhoes	Diesel	Average	1.00	2.20	430	0.37
Clearing and Grubbing	Rubber Tired Dozers	Diesel	Average	1.00	11.0	367	0.40
Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	84.0	0.37
Remove Asphalt	Excavators	Diesel	Average	1.00	11.0	36.0	0.38
Quarry Stone	Other General Industrial Equipment	Diesel	Average	1.00	11.0	83.0	0.34
Quarry Stone	Rubber Tired Dozers	Diesel	Average	1.00	11.0	367	0.40
Quarry Stone	Excavators	Diesel	Average	1.00	1.00	36.0	0.38
Choke Stone	Other General Industrial Equipment	Diesel	Average	1.00	11.0	83.0	0.34
Choke Stone	Rubber Tired Dozers	Diesel	Average	1.00	11.0	367	0.40
Choke Stone	Excavators	Diesel	Average	1.00	11.0	36.0	0.38
Aggregate Base	Other General Industrial Equipment	Diesel	Average	1.00	11.0	83.0	0.34
Aggregate Base	Rubber Tired Dozers	Diesel	Average	1.00	11.0	367	0.40
Aggregate Base	Excavators	Diesel	Average	1.00	11.0	36.0	0.38
Import Fill	Other General Industrial Equipment	Diesel	Average	1.00	11.0	83.0	0.34
Import Fill	Rubber Tired Dozers	Diesel	Average	1.00	11.0	367	0.40
Geotextile Fabric	Off-Highway Trucks	Diesel	Average	1.00	11.0	265	0.38
Seeding and Mulching	Off-Highway Trucks	Diesel	Average	1.00	11.0	265	0.38
Demobilization	Tractors/Loaders/Backhoes	Diesel	Average	1.00	11.0	430	0.37
Relocate Waterline	Excavators	Diesel	Average	1.00	2.00	36.0	0.38
Relocate Waterline	Other General Industrial Equipment	Diesel	Average	1.00	11.0	83.0	0.34

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Structural Excavation	Excavators	Diesel	Average	1.00	11.0	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Temporary Bike Reroute	Other General Industrial Equipment	Diesel	Tier 4 Final	1.00	4.30	83.0	0.34
Temporary Bike Reroute	Graders	Diesel	Tier 4 Final	1.00	3.00	148	0.41
Temporary Bike Reroute	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	3.00	367	0.40
Temporary Bike Reroute	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	6.00	5.70	430	0.37
Temporary Bike Reroute	Pavers	Diesel	Tier 4 Final	1.00	1.40	81.0	0.42
Temporary Bike Reroute	Cranes	Diesel	Tier 4 Final	1.00	1.40	367	0.29
Permanent Bike Reoute	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	5.50	367	0.40
Permanent Bike Reoute	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	2.20	84.0	0.37
Permanent Bike Reoute	Other General Industrial Equipment	Diesel	Tier 4 Final	1.00	4.40	83.0	0.37
Permanent Bike Reoute	Graders	Diesel	Tier 4 Final	1.00	4.30	148	0.41
Permanent Bike Reoute	Pavers	Diesel	Tier 4 Final	1.00	1.10	174	0.42
Permanent Bike Reoute	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	2.20	265	0.38
Permanent Bike Reoute	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	2.20	430	0.37
Clearing and Grubbing	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	11.0	367	0.40
Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	11.0	84.0	0.37
Remove Asphalt	Excavators	Diesel	Tier 4 Final	1.00	11.0	36.0	0.38
Quarry Stone	Other General Industrial Equipment	Diesel	Tier 4 Final	1.00	11.0	83.0	0.34
Quarry Stone	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	11.0	367	0.40
Quarry Stone	Excavators	Diesel	Tier 4 Final	1.00	1.00	36.0	0.38
Choke Stone	Other General Industrial Equipment	Diesel	Tier 4 Final	1.00	11.0	83.0	0.34
Choke Stone	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	11.0	367	0.40
Choke Stone	Excavators	Diesel	Tier 4 Final	1.00	11.0	36.0	0.38
Aggregate Base	Other General Industrial Equipment	Diesel	Tier 4 Final	1.00	11.0	83.0	0.34
Aggregate Base	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	11.0	367	0.40
Aggregate Base	Excavators	Diesel	Tier 4 Final	1.00	11.0	36.0	0.38
Import Fill	Other General Industrial Equipment	Diesel	Tier 4 Final	1.00	11.0	83.0	0.34
Import Fill	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	11.0	367	0.40

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Geotextile Fabric	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	11.0	265	0.38
Seeding and Mulching	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	11.0	265	0.38
Demobilization	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	11.0	430	0.37
Relocate Waterline	Excavators	Diesel	Tier 4 Final	1.00	2.00	36.0	0.38
Relocate Waterline	Other General Industrial Equipment	Diesel	Tier 4 Final	1.00	11.0	83.0	0.34
Structural Excavation	Excavators	Diesel	Tier 4 Final	1.00	11.0	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Clearing and Grubbing	—	—	—	—
Clearing and Grubbing	Worker	122	10.0	LDA,LDT1,LDT2
Clearing and Grubbing	Vendor	0.00	7.10	HHDT,MHDT
Clearing and Grubbing	Hauling	27.5	30.0	HHDT
Clearing and Grubbing	Onsite truck	—	—	HHDT
Temporary Bike Reroute	—	—	—	—
Temporary Bike Reroute	Worker	122	10.0	LDA,LDT1,LDT2
Temporary Bike Reroute	Vendor	0.00	7.10	HHDT,MHDT
Temporary Bike Reroute	Hauling	312	65.0	HHDT
Temporary Bike Reroute	Onsite truck	—	—	HHDT
Remove Asphalt	—	—	—	—
Remove Asphalt	Worker	122	10.0	LDA,LDT1,LDT2
Remove Asphalt	Vendor	0.00	7.10	HHDT,MHDT
Remove Asphalt	Hauling	5.00	30.0	HHDT
Remove Asphalt	Onsite truck	—	—	HHDT
Quarry Stone	—	—	—	—
Quarry Stone	Worker	122	10.0	LDA,LDT1,LDT2
Quarry Stone	Vendor	0.00	7.10	HHDT,MHDT
Quarry Stone	Hauling	83.1	100	HHDT
Quarry Stone	Onsite truck	—	—	HHDT
Choke Stone	—	—	—	—

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Choke Stone	Worker	122	10.0	LDA,LDT1,LDT2
Choke Stone	Vendor	0.00	7.10	HHDT,MHDT
Choke Stone	Hauling	16.5	100	HHDT
Choke Stone	Onsite truck	—	—	HHDT
Aggregate Base	—	—	—	—
Aggregate Base	Worker	122	10.0	LDA,LDT1,LDT2
Aggregate Base	Vendor	0.00	7.10	HHDT,MHDT
Aggregate Base	Hauling	24.5	100	HHDT
Aggregate Base	Onsite truck	—	—	HHDT
Import Fill	—	—	—	—
Import Fill	Worker	122	10.0	LDA,LDT1,LDT2
Import Fill	Vendor	0.00	7.10	HHDT,MHDT
Import Fill	Hauling	114	100	HHDT
Import Fill	Onsite truck	—	—	HHDT
Geotextile Fabric	—	—	—	—
Geotextile Fabric	Worker	122	10.0	LDA,LDT1,LDT2
Geotextile Fabric	Vendor	0.00	7.10	HHDT,MHDT
Geotextile Fabric	Hauling	1.00	100	HHDT
Geotextile Fabric	Onsite truck	—	—	HHDT
Seeding and Mulching	—	—	—	—
Seeding and Mulching	Worker	122	10.0	LDA,LDT1,LDT2
Seeding and Mulching	Vendor	0.00	7.10	HHDT,MHDT
Seeding and Mulching	Hauling	1.00	100	HHDT
Seeding and Mulching	Onsite truck	—	—	HHDT
Demobilization	—	—	—	—
Demobilization	Worker	20.0	10.0	LDA,LDT1,LDT2
Demobilization	Vendor	0.00	7.10	HHDT,MHDT
Demobilization	Hauling	0.00	20.0	HHDT
Demobilization	Onsite truck	—	—	HHDT
Relocate Waterline	—	—	—	—
Relocate Waterline	Worker	122	10.0	LDA,LDT1,LDT2
Relocate Waterline	Vendor	0.00	7.10	HHDT,MHDT
Relocate Waterline	Hauling	40.0	65.0	HHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Relocate Waterline	Onsite truck	—	—	HHDT
Structural Excavation	—	—	—	—
Structural Excavation	Worker	122	10.0	LDA,LDT1,LDT2
Structural Excavation	Vendor	0.00	7.10	HHDT,MHDT
Structural Excavation	Hauling	101	30.0	HHDT
Structural Excavation	Onsite truck	—	—	HHDT
Permanent Bike Reoute	—	—	—	—
Permanent Bike Reoute	Worker	122	10.0	LDA,LDT1,LDT2
Permanent Bike Reoute	Vendor	0.00	7.10	HHDT,MHDT
Permanent Bike Reoute	Hauling	139	65.0	HHDT
Permanent Bike Reoute	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Clearing and Grubbing	—	—	—	—
Clearing and Grubbing	Worker	122	10.0	LDA,LDT1,LDT2
Clearing and Grubbing	Vendor	0.00	7.10	HHDT,MHDT
Clearing and Grubbing	Hauling	27.5	30.0	HHDT
Clearing and Grubbing	Onsite truck	—	—	HHDT
Temporary Bike Reroute	—	—	—	—
Temporary Bike Reroute	Worker	122	10.0	LDA,LDT1,LDT2
Temporary Bike Reroute	Vendor	0.00	7.10	HHDT,MHDT
Temporary Bike Reroute	Hauling	312	65.0	HHDT
Temporary Bike Reroute	Onsite truck	—	—	HHDT
Remove Asphalt	—	—	—	—
Remove Asphalt	Worker	122	10.0	LDA,LDT1,LDT2
Remove Asphalt	Vendor	0.00	7.10	HHDT,MHDT
Remove Asphalt	Hauling	5.00	30.0	HHDT
Remove Asphalt	Onsite truck	—	—	HHDT
Quarry Stone	—	—	—	—
Quarry Stone	Worker	122	10.0	LDA,LDT1,LDT2
Quarry Stone	Vendor	0.00	7.10	HHDT,MHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Quarry Stone	Hauling	83.1	100	HHDT
Quarry Stone	Onsite truck	—	—	HHDT
Choke Stone	—	—	—	—
Choke Stone	Worker	122	10.0	LDA,LDT1,LDT2
Choke Stone	Vendor	0.00	7.10	HHDT,MHDT
Choke Stone	Hauling	16.5	100	HHDT
Choke Stone	Onsite truck	—	—	HHDT
Aggregate Base	—	—	—	—
Aggregate Base	Worker	122	10.0	LDA,LDT1,LDT2
Aggregate Base	Vendor	0.00	7.10	HHDT,MHDT
Aggregate Base	Hauling	24.5	100	HHDT
Aggregate Base	Onsite truck	—	—	HHDT
Import Fill	—	—	—	—
Import Fill	Worker	122	10.0	LDA,LDT1,LDT2
Import Fill	Vendor	0.00	7.10	HHDT,MHDT
Import Fill	Hauling	114	100	HHDT
Import Fill	Onsite truck	—	—	HHDT
Geotextile Fabric	—	—	—	—
Geotextile Fabric	Worker	122	10.0	LDA,LDT1,LDT2
Geotextile Fabric	Vendor	0.00	7.10	HHDT,MHDT
Geotextile Fabric	Hauling	1.00	100	HHDT
Geotextile Fabric	Onsite truck	—	—	HHDT
Seeding and Mulching	—	—	—	—
Seeding and Mulching	Worker	122	10.0	LDA,LDT1,LDT2
Seeding and Mulching	Vendor	0.00	7.10	HHDT,MHDT
Seeding and Mulching	Hauling	1.00	100	HHDT
Seeding and Mulching	Onsite truck	—	—	HHDT
Demobilization	—	—	—	—
Demobilization	Worker	20.0	10.0	LDA,LDT1,LDT2
Demobilization	Vendor	0.00	7.10	HHDT,MHDT
Demobilization	Hauling	0.00	20.0	HHDT
Demobilization	Onsite truck	—	—	HHDT
Relocate Waterline	—	—	—	—

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Relocate Waterline	Worker	122	10.0	LDA,LDT1,LDT2
Relocate Waterline	Vendor	0.00	7.10	HHDT,MHDT
Relocate Waterline	Hauling	40.0	65.0	HHDT
Relocate Waterline	Onsite truck	—	—	HHDT
Structural Excavation	—	—	—	—
Structural Excavation	Worker	122	10.0	LDA,LDT1,LDT2
Structural Excavation	Vendor	0.00	7.10	HHDT,MHDT
Structural Excavation	Hauling	101	30.0	HHDT
Structural Excavation	Onsite truck	—	—	HHDT
Permanent Bike Reoute	—	—	—	—
Permanent Bike Reoute	Worker	122	10.0	LDA,LDT1,LDT2
Permanent Bike Reoute	Vendor	0.00	7.10	HHDT,MHDT
Permanent Bike Reoute	Hauling	139	65.0	HHDT
Permanent Bike Reoute	Onsite truck	—	—	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 (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Temporary Bike Reroute	15,753	1,690	5.00	0.00	—
Clearing and Grubbing	0.00	433	5.00	0.00	—
Remove Asphalt	0.00	75.0	5.00	0.00	—

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Quarry Stone	5,980	0.00	5.00	0.00	—
Choke Stone	260	0.00	0.00	0.00	—
Aggregate Base	390	0.00	0.00	0.00	—
Import Fill	7,280	0.00	0.00	0.00	—
Geotextile Fabric	0.00	0.00	0.00	0.00	—
Seeding and Mulching	0.00	0.00	5.00	0.00	—
Demobilization	0.00	0.00	0.00	0.00	—
Relocate Waterline	800	800	0.00	0.00	—
Structural Excavation	0.00	4,817	5.00	0.00	—
Permanent Bike Reoute	6,240	3,794	5.00	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
User Defined Linear	5.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	375	0.01	< 0.005

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	20.2	annual days of extreme heat
Extreme Precipitation	6.00	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	1	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	1	1	1	2
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	50.5
AQ-PM	37.6
AQ-DPM	69.9
Drinking Water	16.8
Lead Risk Housing	79.0
Pesticides	0.00
Toxic Releases	29.2
Traffic	32.4
Effect Indicators	—
CleanUp Sites	87.2
Groundwater	93.8
Haz Waste Facilities/Generators	80.2
Impaired Water Bodies	77.3
Solid Waste	22.1
Sensitive Population	—
Asthma	99.5
Cardio-vascular	97.1
Low Birth Weights	76.1
Socioeconomic Factor Indicators	—
Education	60.6
Housing	93.6
Linguistic	—
Poverty	94.1
Unemployment	95.5

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	11.54882587
Employed	2.989862697
Median HI	2.951366611
Education	—
Bachelor's or higher	43.64172976
High school enrollment	0.551777236
Preschool enrollment	67.11151033
Transportation	—
Auto Access	6.467342487
Active commuting	37.39253176
Social	—
2-parent households	13.17849352
Voting	40.74169126
Neighborhood	—
Alcohol availability	30.25792378
Park access	81.35506224
Retail density	79.26344155
Supermarket access	52.34184525
Tree canopy	89.20826383
Housing	—
Homeownership	23.32862826
Housing habitability	26.71628384
Low-inc homeowner severe housing cost burden	9.149236494
Low-inc renter severe housing cost burden	31.63095085
Uncrowded housing	51.79006801
Health Outcomes	—
Insured adults	22.55870653
Arthritis	4.4
Asthma ER Admissions	1.4

Indicator	Result for Project Census Tract
High Blood Pressure	5.4
Cancer (excluding skin)	22.7
Asthma	8.7
Coronary Heart Disease	3.6
Chronic Obstructive Pulmonary Disease	2.8
Diagnosed Diabetes	13.8
Life Expectancy at Birth	3.0
Cognitively Disabled	17.4
Physically Disabled	3.8
Heart Attack ER Admissions	4.0
Mental Health Not Good	20.5
Chronic Kidney Disease	10.6
Obesity	14.4
Pedestrian Injuries	96.6
Physical Health Not Good	14.8
Stroke	6.5
Health Risk Behaviors	—
Binge Drinking	78.7
Current Smoker	10.2
No Leisure Time for Physical Activity	30.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	72.4
Elderly	39.7
English Speaking	27.5
Foreign-born	35.6
Outdoor Workers	71.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	46.6
Traffic Density	33.0
Traffic Access	73.9
Other Indices	—

Indicator	Result for Project Census Tract
Hardship	86.5
Other Decision Support	—
2016 Voting	22.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	94.0
Healthy Places Index Score for Project Location (b)	2.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
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	Phasing provided by USACE.
Construction: Off-Road Equipment	Equipment list provided by USACE.
Construction: Dust From Material Movement	Material quantities provided by USACE.
Construction: Trips and VMT	Trip lengths are provided by USACE.
Construction: On-Road Fugitive Dust	Estimated percent paved.

Sacramento River Erosion Contract 3 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Sacramento River Erosion Contract 3
Construction Start Date	7/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	6.00
Location	38.495754763139416, -121.55674138170414
County	Sacramento
City	Sacramento
Air District	Sacramento Metropolitan AQMD
Air Basin	Sacramento Valley
TAZ	755
EDFZ	13
Electric Utility	Sacramento Municipal Utility District
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
User Defined Linear	3.00	Mile	26.0	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	5.09	4.28	33.0	30.5	0.11	1.71	0.90	2.06	1.57	0.11	1.60	—	11,747	11,747	0.47	0.10	0.44	11,788
Mit.	1.02	1.01	5.08	54.7	0.09	0.19	0.41	0.61	0.19	0.06	0.25	—	10,365	10,365	0.42	0.09	0.44	10,402
% Reduced	80%	76%	85%	-80%	12%	89%	54%	71%	88%	48%	84%	—	12%	12%	12%	12%	—	12%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.00	3.37	24.7	30.3	0.09	1.16	0.90	2.06	1.07	0.11	1.18	—	10,352	10,352	0.42	0.09	0.02	10,389
Mit.	1.01	1.01	5.09	54.6	0.09	0.19	0.41	0.61	0.19	0.06	0.25	—	10,352	10,352	0.42	0.09	0.02	10,389
% Reduced	75%	70%	79%	-80%	—	83%	54%	71%	82%	48%	79%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.31	1.10	8.37	8.25	0.03	0.40	0.15	0.46	0.37	0.02	0.38	—	3,005	3,005	0.12	0.03	0.06	3,016

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Mit.	0.30	0.30	1.51	15.5	0.03	0.06	0.08	0.14	0.06	0.01	0.07	—	3,005	3,005	0.12	0.03	0.06	3,016
% Reduced	77%	73%	82%	-88%	—	86%	48%	70%	84%	38%	81%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.24	0.20	1.53	1.51	0.01	0.07	0.03	0.08	0.07	< 0.005	0.07	—	497	497	0.02	< 0.005	0.01	499
Mit.	0.05	0.05	0.28	2.83	0.01	0.01	0.01	0.02	0.01	< 0.005	0.01	—	497	497	0.02	< 0.005	0.01	499
% Reduced	77%	73%	82%	-88%	—	86%	48%	70%	84%	38%	81%	—	—	—	—	—	—	—
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	85.0	—	—	—	—	80.0	—	—	82.0	—	—	—	—	—	—	—
Unmit.	—	—	No	—	—	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—
Mit.	—	—	No	—	—	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	85.0	—	—	—	—	80.0	—	—	82.0	—	—	—	—	—	—	—
Unmit.	—	—	No	—	—	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—
Mit.	—	—	No	—	—	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	14.6	—	—	15.0	—	—	—	—	—	—	1,100
Unmit.	—	—	—	—	—	Yes	—	No	Yes	—	No	—	—	—	—	—	—	No
Mit.	—	—	—	—	—	Yes	—	No	Yes	—	No	—	—	—	—	—	—	No

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	5.09	4.28	33.0	29.2	0.11	1.71	0.30	1.81	1.57	0.05	1.60	—	11,747	11,747	0.47	0.10	0.44	11,788
2026	4.01	3.37	24.7	30.5	0.09	1.16	0.90	2.06	1.07	0.11	1.18	—	10,365	10,365	0.42	0.09	0.40	10,402
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.82	3.21	24.2	24.6	0.08	1.16	0.13	1.26	1.07	0.03	1.09	—	8,860	8,860	0.36	0.08	0.02	8,891
2026	4.00	3.37	24.7	30.3	0.09	1.16	0.90	2.06	1.07	0.11	1.18	—	10,352	10,352	0.42	0.09	0.02	10,389
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.31	1.10	8.37	7.95	0.03	0.40	0.05	0.45	0.37	0.01	0.38	—	2,976	2,976	0.12	0.03	0.06	2,986
2026	1.12	0.94	6.76	8.25	0.03	0.31	0.15	0.46	0.28	0.02	0.30	—	3,005	3,005	0.12	0.03	0.06	3,016
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.24	0.20	1.53	1.45	< 0.005	0.07	0.01	0.08	0.07	< 0.005	0.07	—	493	493	0.02	< 0.005	0.01	494
2026	0.20	0.17	1.23	1.51	0.01	0.06	0.03	0.08	0.05	< 0.005	0.06	—	497	497	0.02	< 0.005	0.01	499

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.94	0.94	4.70	48.6	0.09	0.18	0.18	0.28	0.18	0.03	0.20	—	9,598	9,598	0.39	0.08	0.44	9,632
2026	1.02	1.01	5.08	54.7	0.09	0.19	0.41	0.61	0.19	0.06	0.25	—	10,365	10,365	0.42	0.09	0.40	10,402
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.87	0.87	4.35	45.7	0.08	0.17	0.13	0.27	0.17	0.03	0.19	—	8,860	8,860	0.36	0.08	0.02	8,891

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
2026	1.01	1.01	5.09	54.6	0.09	0.19	0.41	0.61	0.19	0.06	0.25	—	10,352	10,352	0.42	0.09	0.02	10,389
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.25	0.25	1.26	13.1	0.02	0.05	0.04	0.09	0.05	0.01	0.06	—	2,569	2,569	0.10	0.02	0.06	2,578
2026	0.30	0.30	1.51	15.5	0.03	0.06	0.08	0.14	0.06	0.01	0.07	—	3,005	3,005	0.12	0.03	0.06	3,016
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.05	0.05	0.23	2.40	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	425	425	0.02	< 0.005	0.01	427
2026	0.05	0.05	0.28	2.83	0.01	0.01	0.01	0.02	0.01	< 0.005	0.01	—	497	497	0.02	< 0.005	0.01	499

3. Construction Emissions Details

3.1. Linear, Grubbing & Land Clearing (2025) - 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 Equipmen	1.39	1.17	7.97	8.76	0.04	0.27	—	0.27	0.25	—	0.25	—	4,099	4,099	0.17	0.03	—	4,113
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.02	0.02	0.11	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.2	56.2	< 0.005	< 0.005	—	56.3

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.30	9.30	< 0.005	< 0.005	—	9.33
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.01	102
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	0.01	< 0.005	0.20	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	104	104	0.01	0.02	0.01	109
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.44
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.49
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.24
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25

3.2. Linear, Grubbing & Land Clearing (2025) - 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 Equipmen	0.39	0.39	2.02	20.2	0.04	0.08	—	0.08	0.08	—	0.08	—	4,099	4,099	0.17	0.03	—	4,113
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.01	0.01	0.03	0.28	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.2	56.2	< 0.005	< 0.005	—	56.3
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.30	9.30	< 0.005	< 0.005	—	9.33
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.01	102
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	0.01	< 0.005	0.20	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	104	104	0.01	0.02	0.01	109
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.44
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.49
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.24
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25

3.3. Linear, Grubbing & Land Clearing (2026) - 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 Equipmen	1.37	1.15	7.41	8.78	0.04	0.26	—	0.26	0.24	—	0.24	—	4,101	4,101	0.17	0.03	—	4,115

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.02	0.02	0.10	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.2	56.2	< 0.005	< 0.005	—	56.4
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.30	9.30	< 0.005	< 0.005	—	9.33
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	98.8	98.8	< 0.005	< 0.005	0.01	100
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	0.01	< 0.005	0.19	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	101	101	0.01	0.02	0.01	107
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.39	1.39	< 0.005	< 0.005	< 0.005	1.41
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.39	1.39	< 0.005	< 0.005	< 0.005	1.46
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.23
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.24

3.4. Linear, Grubbing & Land Clearing (2026) - 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 Equipmen	0.39	0.39	2.02	20.2	0.04	0.08	—	0.08	0.08	—	0.08	—	4,101	4,101	0.17	0.03	—	4,115
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.01	0.01	0.03	0.28	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.2	56.2	< 0.005	< 0.005	—	56.4
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.30	9.30	< 0.005	< 0.005	—	9.33
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	98.8	98.8	< 0.005	< 0.005	0.01	100
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	0.01	< 0.005	0.19	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	101	101	0.01	0.02	0.01	107
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.39	1.39	< 0.005	< 0.005	< 0.005	1.41
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.39	1.39	< 0.005	< 0.005	< 0.005	1.46
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.23
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.24

3.5. Linear, Grubbing & Land Clearing (2025) - 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 Equipmen	1.39	1.17	7.97	8.76	0.04	0.27	—	0.27	0.25	—	0.25	—	4,099	4,099	0.17	0.03	—	4,113
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.02	0.02	0.11	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.2	56.2	< 0.005	< 0.005	—	56.3
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.30	9.30	< 0.005	< 0.005	—	9.33
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.01	102
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.44
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.24
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

3.6. Linear, Grubbing & Land Clearing (2025) - 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 Equipmen	0.39	0.39	2.02	20.2	0.04	0.08	—	0.08	0.08	—	0.08	—	4,099	4,099	0.17	0.03	—	4,113

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.01	0.01	0.03	0.28	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.2	56.2	< 0.005	< 0.005	—	56.3
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.30	9.30	< 0.005	< 0.005	—	9.33
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.01	102
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.44
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.24
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

3.7. Linear, Grubbing & Land Clearing (2026) - 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 Equipmen	1.37	1.15	7.41	8.78	0.04	0.26	—	0.26	0.24	—	0.24	—	4,101	4,101	0.17	0.03	—	4,115
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.02	0.02	0.10	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.2	56.2	< 0.005	< 0.005	—	56.4
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.30	9.30	< 0.005	< 0.005	—	9.33
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	98.8	98.8	< 0.005	< 0.005	0.01	100
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.39	1.39	< 0.005	< 0.005	< 0.005	1.41
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.23
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

3.8. Linear, Grubbing & Land Clearing (2026) - 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 Equipmen	0.89	0.78	4.38	15.7	0.04	0.16	—	0.16	0.15	—	0.15	—	4,101	4,101	0.17	0.03	—	4,115
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.01	0.01	0.06	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.2	56.2	< 0.005	< 0.005	—	56.4
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.30	9.30	< 0.005	< 0.005	—	9.33
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	98.8	98.8	< 0.005	< 0.005	0.01	100
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.39	1.39	< 0.005	< 0.005	< 0.005	1.41
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.23
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

3.9. Linear, Grading & Excavation (2025) - 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 Equipmen	5.05	4.24	32.9	25.9	0.09	1.71	—	1.71	1.57	—	1.57	—	9,484	9,484	0.38	0.08	—	9,517
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.33	0.28	2.17	1.70	0.01	0.11	—	0.11	0.10	—	0.10	—	624	624	0.03	0.01	—	626
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	0.06	0.05	0.40	0.31	< 0.005	0.02	—	0.02	0.02	—	0.02	—	103	103	< 0.005	< 0.005	—	104
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.05	0.04	0.03	0.60	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	114	114	< 0.005	< 0.005	0.44	115
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.80	6.80	< 0.005	< 0.005	0.01	6.89
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.13	1.13	< 0.005	< 0.005	< 0.005	1.14
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

3.10. Linear, Grading & Excavation (2025) - 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 Equipmen	0.90	0.90	4.67	48.0	0.09	0.18	—	0.18	0.18	—	0.18	—	9,484	9,484	0.38	0.08	—	9,517
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	0.06	0.06	0.31	3.16	0.01	0.01	—	0.01	0.01	—	0.01	—	624	624	0.03	0.01	—	626
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.01	0.01	0.06	0.58	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	103	103	< 0.005	< 0.005	—	104
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.05	0.04	0.03	0.60	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	114	114	< 0.005	< 0.005	0.44	115
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	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.80	6.80	< 0.005	< 0.005	0.01	6.89
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.13	1.13	< 0.005	< 0.005	< 0.005	1.14
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

3.11. Linear, Grading & Excavation (2025) - 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 Equipmen	4.70	3.95	30.3	28.6	0.11	1.38	—	1.38	1.27	—	1.27	—	11,633	11,633	0.47	0.09	—	11,673
Dust From Material Movemen	—	—	—	—	—	—	0.20	0.20	—	0.02	0.02	—	—	—	—	—	—	—
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 Equipmen	0.31	0.26	1.99	1.88	0.01	0.09	—	0.09	0.08	—	0.08	—	765	765	0.03	0.01	—	768
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.06	0.05	0.36	0.34	< 0.005	0.02	—	0.02	0.02	—	0.02	—	127	127	0.01	< 0.005	—	127
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.60	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	114	114	< 0.005	< 0.005	0.44	115
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	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.80	6.80	< 0.005	< 0.005	0.01	6.89
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.13	1.13	< 0.005	< 0.005	< 0.005	1.14
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

3.12. Linear, Grading & Excavation (2025) - 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 Equipmen	0.52	0.52	2.68	27.9	0.05	0.10	—	0.10	0.10	—	0.10	—	5,448	5,448	0.22	0.04	—	5,467
Dust From Material Movemen	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.03	0.03	0.18	1.84	< 0.005	0.01	—	0.01	0.01	—	0.01	—	358	358	0.01	< 0.005	—	359
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.03	0.34	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	59.3	59.3	< 0.005	< 0.005	—	59.5
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.05	0.04	0.03	0.60	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	114	114	< 0.005	< 0.005	0.44	115
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.80	6.80	< 0.005	< 0.005	0.01	6.89
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.13	1.13	< 0.005	< 0.005	< 0.005	1.14
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

3.13. Linear, Grading & Excavation (2025) - 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 Equipmen	3.77	3.17	24.2	24.2	0.08	1.16	—	1.16	1.07	—	1.07	—	8,759	8,759	0.36	0.07	—	8,789
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	3.77	3.17	24.2	24.2	0.08	1.16	—	1.16	1.07	—	1.07	—	8,759	8,759	0.36	0.07	—	8,789
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.62	0.52	3.98	3.98	0.01	0.19	—	0.19	0.18	—	0.18	—	1,440	1,440	0.06	0.01	—	1,445
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	0.11	0.10	0.73	0.73	< 0.005	0.03	—	0.03	0.03	—	0.03	—	238	238	0.01	< 0.005	—	239
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.05	0.04	0.03	0.60	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	114	114	< 0.005	< 0.005	0.44	115
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.01	102
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.0	17.0	< 0.005	< 0.005	0.03	17.2
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—	2.81	2.81	< 0.005	< 0.005	0.01	2.85
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

3.14. Linear, Grading & Excavation (2025) – 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 Equipmen	0.83	0.83	4.32	45.2	0.08	0.17	—	0.17	0.17	—	0.17	—	8,759	8,759	0.36	0.07	—	8,789
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.83	0.83	4.32	45.2	0.08	0.17	—	0.17	0.17	—	0.17	—	8,759	8,759	0.36	0.07	—	8,789
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	0.14	0.14	0.71	7.43	0.01	0.03	—	0.03	0.03	—	0.03	—	1,440	1,440	0.06	0.01	—	1,445
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	0.02	0.02	0.13	1.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	238	238	0.01	< 0.005	—	239
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.05	0.04	0.03	0.60	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	114	114	< 0.005	< 0.005	0.44	115
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.01	102
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.0	17.0	< 0.005	< 0.005	0.03	17.2
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.81	2.81	< 0.005	< 0.005	0.01	2.85
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

3.15. Linear, Grading & Excavation (2026) - 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 Equipmen	3.24	2.73	19.6	23.3	0.08	0.86	—	0.86	0.79	—	0.79	—	9,067	9,067	0.37	0.07	—	9,098
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	0.48	0.40	2.90	3.45	0.01	0.13	—	0.13	0.12	—	0.12	—	1,341	1,341	0.05	0.01	—	1,346
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	0.09	0.07	0.53	0.63	< 0.005	0.02	—	0.02	0.02	—	0.02	—	222	222	0.01	< 0.005	—	223

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.04	0.04	0.03	0.56	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	111	111	< 0.005	< 0.005	0.40	113
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	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.03	15.2
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.48	2.48	< 0.005	< 0.005	< 0.005	2.52
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

3.16. Linear, Grading & Excavation (2026) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	0.86	0.86	4.47	46.4	0.08	0.17	—	0.17	0.17	—	0.17	—	9,067	9,067	0.37	0.07	—	9,098
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	0.13	0.13	0.66	6.86	0.01	0.03	—	0.03	0.03	—	0.03	—	1,341	1,341	0.05	0.01	—	1,346
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	0.02	0.02	0.12	1.25	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	222	222	0.01	< 0.005	—	223
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.04	0.04	0.03	0.56	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	111	111	< 0.005	< 0.005	0.40	113
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.03	15.2
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.48	2.48	< 0.005	< 0.005	< 0.005	2.52
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

3.17. Linear, Grading & Excavation (2026) - 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 Equipmen	3.96	3.33	24.7	29.9	0.09	1.16	—	1.16	1.07	—	1.07	—	10,254	10,254	0.42	0.08	—	10,289
Dust From Material Movemen	—	—	—	—	—	—	0.80	0.80	—	0.09	0.09	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	3.96	3.33	24.7	29.9	0.09	1.16	—	1.16	1.07	—	1.07	—	10,254	10,254	0.42	0.08	—	10,289

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	0.80	0.80	—	0.09	0.09	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.59	0.49	3.65	4.42	0.01	0.17	—	0.17	0.16	—	0.16	—	1,517	1,517	0.06	0.01	—	1,522
Dust From Material Movemen	—	—	—	—	—	—	0.12	0.12	—	0.01	0.01	—	—	—	—	—	—	—
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 Equipmen	0.11	0.09	0.67	0.81	< 0.005	0.03	—	0.03	0.03	—	0.03	—	251	251	0.01	< 0.005	—	252
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.04	0.04	0.03	0.56	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	111	111	< 0.005	< 0.005	0.40	113
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	98.8	98.8	< 0.005	< 0.005	0.01	100
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.03	15.2
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.48	2.48	< 0.005	< 0.005	< 0.005	2.52
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

3.18. Linear, Grading & Excavation (2026) - 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 Equipmen	0.97	0.97	5.05	54.2	0.09	0.19	—	0.19	0.19	—	0.19	—	10,254	10,254	0.42	0.08	—	10,289
Dust From Material Movemen	—	—	—	—	—	—	0.31	0.31	—	0.03	0.03	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.97	0.97	5.05	54.2	0.09	0.19	—	0.19	0.19	—	0.19	—	10,254	10,254	0.42	0.08	—	10,289

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	0.31	0.31	—	0.03	0.03	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.14	0.14	0.75	8.01	0.01	0.03	—	0.03	0.03	—	0.03	—	1,517	1,517	0.06	0.01	—	1,522
Dust From Material Movemen	—	—	—	—	—	—	0.05	0.05	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	0.03	0.03	0.14	1.46	< 0.005	0.01	—	0.01	0.01	—	0.01	—	251	251	0.01	< 0.005	—	252
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.04	0.04	0.03	0.56	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	111	111	< 0.005	< 0.005	0.40	113
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	98.8	98.8	< 0.005	< 0.005	0.01	100
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.03	15.2
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.48	2.48	< 0.005	< 0.005	< 0.005	2.52
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, Summe r (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Seques tered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remov e d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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
Vegetation Clearing - Year 1	Linear, Grubbing & Land Clearing	2/1/2025	2/6/2025	6.00	5.00	Tree removal and site preparation
Vegetation Clearing - Year 2	Linear, Grubbing & Land Clearing	2/1/2026	2/6/2026	6.00	5.00	Tree removal and site preparation
Demobilization - Year 1	Linear, Grubbing & Land Clearing	10/30/2025	11/4/2025	6.00	5.00	—
Demobilization - Year 2	Linear, Grubbing & Land Clearing	10/29/2026	11/3/2026	6.00	5.00	—
Phase 1	Linear, Grading & Excavation	6/26/2025	7/23/2025	6.00	24.0	—
Phase 2	Linear, Grading & Excavation	7/24/2025	8/20/2025	6.00	24.0	—
Phase 3	Linear, Grading & Excavation	8/21/2025	10/29/2025	6.00	60.0	—
Phase 4	Linear, Grading & Excavation	6/25/2026	8/26/2026	6.00	54.0	—
Phase 5	Linear, Grading & Excavation	8/27/2026	10/28/2026	6.00	54.0	—

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
Vegetation Clearing - Year 1	Excavators	Diesel	Average	2.00	10.0	275	0.38
Vegetation Clearing - Year 1	Off-Highway Trucks	Diesel	Average	1.00	10.0	376	0.38
Vegetation Clearing - Year 2	Excavators	Diesel	Average	2.00	10.0	275	0.38
Vegetation Clearing - Year 2	Off-Highway Trucks	Diesel	Average	1.00	10.0	376	0.38
Demobilization - Year 1	Excavators	Diesel	Average	2.00	10.0	275	0.38
Demobilization - Year 1	Off-Highway Trucks	Diesel	Average	1.00	10.0	376	0.38
Demobilization - Year 2	Excavators	Diesel	Average	2.00	10.0	275	0.38
Demobilization - Year 2	Off-Highway Trucks	Diesel	Average	1.00	10.0	376	0.38
Phase 1	Cranes	Diesel	Average	1.00	8.00	367	0.29
Phase 1	Excavators	Diesel	Average	1.00	8.00	275	0.38
Phase 1	Excavators	Diesel	Average	1.00	8.00	284	0.38
Phase 1	Excavators	Diesel	Average	1.00	8.00	308	0.38

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Phase 1	Excavators	Diesel	Average	1.00	8.00	430	0.38
Phase 1	Skid Steer Loaders	Diesel	Average	2.00	8.00	90.0	0.37
Phase 1	Excavators	Diesel	Average	1.00	8.00	553	0.38
Phase 1	Excavators	Diesel	Average	1.00	8.00	202	0.38
Phase 1	Excavators	Diesel	Average	1.00	8.00	175	0.38
Phase 2	Crawler Tractors	Diesel	Average	1.00	3.00	96.0	0.43
Phase 2	Cranes	Diesel	Average	1.00	8.00	367	0.29
Phase 2	Excavators	Diesel	Average	1.00	8.00	175	0.38
Phase 2	Excavators	Diesel	Average	1.00	8.00	284	0.38
Phase 2	Excavators	Diesel	Average	1.00	8.00	308	0.38
Phase 2	Rollers	Diesel	Average	1.00	1.00	145	0.38
Phase 2	Tractors/Loaders/Backhoes	Diesel	Average	1.00	2.00	294	0.37
Phase 2	Skid Steer Loaders	Diesel	Average	2.00	4.00	90.0	0.37
Phase 2	Excavators	Diesel	Average	1.00	8.00	275	0.38
Phase 3	Cranes	Diesel	Average	1.00	8.00	367	0.29
Phase 3	Excavators	Diesel	Average	1.00	8.00	174	0.38
Phase 3	Excavators	Diesel	Average	1.00	8.00	275	0.38
Phase 3	Excavators	Diesel	Average	1.00	8.00	308	0.38
Phase 3	Excavators	Diesel	Average	1.00	8.00	430	0.38
Phase 3	Excavators	Diesel	Average	1.00	8.00	553	0.38
Phase 3	Excavators	Diesel	Average	1.00	8.00	284	0.38
Phase 3	Tractors/Loaders/Backhoes	Diesel	Average	1.00	2.00	294	0.37
Phase 3	Skid Steer Loaders	Diesel	Average	2.00	4.00	90.0	0.37
Phase 3	Forklifts	Diesel	Average	1.00	2.00	110	0.20
Phase 4	Cranes	Diesel	Average	1.00	8.00	367	0.29
Phase 4	Excavators	Diesel	Average	1.00	8.00	174	0.38
Phase 4	Excavators	Diesel	Average	1.00	8.00	202	0.38
Phase 4	Excavators	Diesel	Average	1.00	8.00	275	0.38
Phase 4	Excavators	Diesel	Average	1.00	8.00	284	0.38
Phase 4	Excavators	Diesel	Average	1.00	8.00	308	0.38
Phase 4	Excavators	Diesel	Average	1.00	8.00	430	0.38
Phase 4	Excavators	Diesel	Average	1.00	8.00	553	0.38
Phase 4	Skid Steer Loaders	Diesel	Average	1.00	4.00	90.0	0.37

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Phase 4	Forklifts	Diesel	Average	1.00	2.00	110	0.20
Phase 5	Cranes	Diesel	Average	1.00	8.00	367	0.29
Phase 5	Excavators	Diesel	Average	1.00	8.00	174	0.38
Phase 5	Excavators	Diesel	Average	1.00	8.00	202	0.38
Phase 5	Excavators	Diesel	Average	1.00	8.00	275	0.38
Phase 5	Excavators	Diesel	Average	1.00	8.00	308	0.38
Phase 5	Excavators	Diesel	Average	1.00	8.00	430	0.38
Phase 5	Excavators	Diesel	Average	1.00	8.00	553	0.38
Phase 5	Excavators	Diesel	Average	1.00	8.00	284	0.38
Phase 5	Crawler Tractors	Diesel	Average	1.00	4.00	84.0	0.43
Phase 5	Crawler Tractors	Diesel	Average	1.00	4.00	96.0	0.43
Phase 5	Rollers	Diesel	Average	1.00	4.00	145	0.38
Phase 5	Tractors/Loaders/Backhoes	Diesel	Average	1.00	2.00	294	0.37
Phase 5	Graders	Diesel	Average	1.00	4.00	165	0.41
Phase 5	Skid Steer Loaders	Diesel	Average	1.00	4.00	90.0	0.37
Phase 5	Forklifts	Diesel	Average	1.00	2.00	110	0.20

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Vegetation Clearing - Year 1	Excavators	Diesel	Tier 4 Final	2.00	10.0	275	0.38
Vegetation Clearing - Year 1	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	10.0	376	0.38
Vegetation Clearing - Year 2	Excavators	Diesel	Tier 4 Final	2.00	10.0	275	0.38
Vegetation Clearing - Year 2	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	10.0	376	0.38
Demobilization - Year 1	Excavators	Diesel	Tier 4 Final	2.00	10.0	275	0.38
Demobilization - Year 1	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	10.0	376	0.38
Demobilization - Year 2	Excavators	Diesel	Tier 4 Final	2.00	10.0	275	0.38
Demobilization - Year 2	Off-Highway Trucks	Diesel	Average	1.00	10.0	376	0.38
Phase 1	Cranes	Diesel	Tier 4 Final	1.00	8.00	367	0.29
Phase 1	Excavators	Diesel	Tier 4 Final	1.00	8.00	275	0.38
Phase 1	Excavators	Diesel	Tier 4 Final	1.00	8.00	284	0.38
Phase 1	Excavators	Diesel	Tier 4 Final	1.00	8.00	308	0.38

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Phase 1	Excavators	Diesel	Tier 4 Final	1.00	8.00	430	0.38
Phase 1	Skid Steer Loaders	Diesel	Tier 4 Final	2.00	8.00	90.0	0.37
Phase 1	Excavators	Diesel	Tier 4 Final	1.00	8.00	553	0.38
Phase 1	Excavators	Diesel	Tier 4 Final	1.00	8.00	202	0.38
Phase 1	Excavators	Diesel	Tier 4 Final	1.00	8.00	175	0.38
Phase 2	Crawler Tractors	Diesel	Tier 4 Final	1.00	3.00	96.0	0.43
Phase 2	Cranes	Diesel	Tier 4 Final	1.00	8.00	367	0.29
Phase 2	Excavators	Diesel	Tier 4 Final	1.00	8.00	175	0.38
Phase 2	Excavators	Diesel	Tier 4 Final	1.00	8.00	284	0.38
Phase 2	Excavators	Diesel	Tier 4 Final	1.00	8.00	308	0.38
Phase 2	Rollers	Diesel	Tier 4 Final	1.00	1.00	145	0.38
Phase 2	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	2.00	294	0.37
Phase 2	Skid Steer Loaders	Diesel	Tier 4 Final	2.00	4.00	90.0	0.37
Phase 2	Excavators	Diesel	Tier 4 Final	1.00	8.00	275	0.38
Phase 3	Cranes	Diesel	Tier 4 Final	1.00	8.00	367	0.29
Phase 3	Excavators	Diesel	Tier 4 Final	1.00	8.00	174	0.38
Phase 3	Excavators	Diesel	Tier 4 Final	1.00	8.00	275	0.38
Phase 3	Excavators	Diesel	Tier 4 Final	1.00	8.00	308	0.38
Phase 3	Excavators	Diesel	Tier 4 Final	1.00	8.00	430	0.38
Phase 3	Excavators	Diesel	Tier 4 Final	1.00	8.00	553	0.38
Phase 3	Excavators	Diesel	Tier 4 Final	1.00	8.00	284	0.38
Phase 3	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	2.00	294	0.37
Phase 3	Skid Steer Loaders	Diesel	Tier 4 Final	2.00	4.00	90.0	0.37
Phase 3	Forklifts	Diesel	Tier 4 Final	1.00	2.00	110	0.20
Phase 4	Cranes	Diesel	Tier 4 Final	1.00	8.00	367	0.29
Phase 4	Excavators	Diesel	Tier 4 Final	1.00	8.00	174	0.38
Phase 4	Excavators	Diesel	Tier 4 Final	1.00	8.00	202	0.38
Phase 4	Excavators	Diesel	Tier 4 Final	1.00	8.00	275	0.38
Phase 4	Excavators	Diesel	Tier 4 Final	1.00	8.00	284	0.38
Phase 4	Excavators	Diesel	Tier 4 Final	1.00	8.00	308	0.38
Phase 4	Excavators	Diesel	Tier 4 Final	1.00	8.00	430	0.38
Phase 4	Excavators	Diesel	Tier 4 Final	1.00	8.00	553	0.38
Phase 4	Skid Steer Loaders	Diesel	Tier 4 Final	1.00	4.00	90.0	0.37

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Phase 4	Forklifts	Diesel	Tier 4 Final	1.00	2.00	110	0.20
Phase 5	Cranes	Diesel	Tier 4 Final	1.00	8.00	367	0.29
Phase 5	Excavators	Diesel	Tier 4 Final	1.00	8.00	174	0.38
Phase 5	Excavators	Diesel	Tier 4 Final	1.00	8.00	202	0.38
Phase 5	Excavators	Diesel	Tier 4 Final	1.00	8.00	275	0.38
Phase 5	Excavators	Diesel	Tier 4 Final	1.00	8.00	308	0.38
Phase 5	Excavators	Diesel	Tier 4 Final	1.00	8.00	430	0.38
Phase 5	Excavators	Diesel	Tier 4 Final	1.00	8.00	553	0.38
Phase 5	Excavators	Diesel	Tier 4 Final	1.00	8.00	284	0.38
Phase 5	Crawler Tractors	Diesel	Tier 4 Final	1.00	4.00	84.0	0.43
Phase 5	Crawler Tractors	Diesel	Tier 4 Final	1.00	4.00	96.0	0.43
Phase 5	Rollers	Diesel	Tier 4 Final	1.00	4.00	145	0.38
Phase 5	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	2.00	294	0.37
Phase 5	Graders	Diesel	Tier 4 Final	1.00	4.00	165	0.41
Phase 5	Skid Steer Loaders	Diesel	Tier 4 Final	1.00	4.00	90.0	0.37
Phase 5	Forklifts	Diesel	Tier 4 Final	1.00	2.00	110	0.20

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Vegetation Clearing - Year 1	—	—	—	—
Vegetation Clearing - Year 1	Worker	10.0	14.3	LDA,LDT1,LDT2
Vegetation Clearing - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Vegetation Clearing - Year 1	Hauling	1.40	20.0	HHDT
Vegetation Clearing - Year 1	Onsite truck	—	—	HHDT
Vegetation Clearing - Year 2	—	—	—	—
Vegetation Clearing - Year 2	Worker	10.0	14.3	LDA,LDT1,LDT2
Vegetation Clearing - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Vegetation Clearing - Year 2	Hauling	1.40	20.0	HHDT
Vegetation Clearing - Year 2	Onsite truck	—	—	HHDT
Phase 1	—	—	—	—

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Phase 1	Worker	10.0	14.3	LDA,LDT1,LDT2
Phase 1	Vendor	0.00	8.80	HHDT,MHDT
Phase 1	Hauling	0.00	20.0	HHDT
Phase 1	Onsite truck	—	—	HHDT
Phase 2	—	—	—	—
Phase 2	Worker	10.0	14.3	LDA,LDT1,LDT2
Phase 2	Vendor	0.00	8.80	HHDT,MHDT
Phase 2	Hauling	0.00	20.0	HHDT
Phase 2	Onsite truck	—	—	HHDT
Phase 3	—	—	—	—
Phase 3	Worker	10.0	14.3	LDA,LDT1,LDT2
Phase 3	Vendor	0.00	8.80	HHDT,MHDT
Phase 3	Hauling	0.00	20.0	HHDT
Phase 3	Onsite truck	—	—	HHDT
Phase 4	—	—	—	—
Phase 4	Worker	10.0	14.3	LDA,LDT1,LDT2
Phase 4	Vendor	0.00	8.80	HHDT,MHDT
Phase 4	Hauling	0.00	20.0	HHDT
Phase 4	Onsite truck	—	—	HHDT
Phase 5	—	—	—	—
Phase 5	Worker	10.0	14.3	LDA,LDT1,LDT2
Phase 5	Vendor	0.00	8.80	HHDT,MHDT
Phase 5	Hauling	0.00	20.0	HHDT
Phase 5	Onsite truck	—	—	HHDT
Demobilization - Year 1	—	—	—	—
Demobilization - Year 1	Worker	10.0	14.3	LDA,LDT1,LDT2
Demobilization - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Demobilization - Year 1	Hauling	0.00	20.0	HHDT
Demobilization - Year 1	Onsite truck	—	—	HHDT
Demobilization - Year 2	—	—	—	—
Demobilization - Year 2	Worker	10.0	14.3	LDA,LDT1,LDT2
Demobilization - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Demobilization - Year 2	Hauling	0.00	20.0	HHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demobilization - Year 2	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Vegetation Clearing - Year 1	—	—	—	—
Vegetation Clearing - Year 1	Worker	10.0	14.3	LDA,LDT1,LDT2
Vegetation Clearing - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Vegetation Clearing - Year 1	Hauling	1.40	20.0	HHDT
Vegetation Clearing - Year 1	Onsite truck	—	—	HHDT
Vegetation Clearing - Year 2	—	—	—	—
Vegetation Clearing - Year 2	Worker	10.0	14.3	LDA,LDT1,LDT2
Vegetation Clearing - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Vegetation Clearing - Year 2	Hauling	1.40	20.0	HHDT
Vegetation Clearing - Year 2	Onsite truck	—	—	HHDT
Phase 1	—	—	—	—
Phase 1	Worker	10.0	14.3	LDA,LDT1,LDT2
Phase 1	Vendor	0.00	8.80	HHDT,MHDT
Phase 1	Hauling	0.00	20.0	HHDT
Phase 1	Onsite truck	—	—	HHDT
Phase 2	—	—	—	—
Phase 2	Worker	10.0	14.3	LDA,LDT1,LDT2
Phase 2	Vendor	0.00	8.80	HHDT,MHDT
Phase 2	Hauling	0.00	20.0	HHDT
Phase 2	Onsite truck	—	—	HHDT
Phase 3	—	—	—	—
Phase 3	Worker	10.0	14.3	LDA,LDT1,LDT2
Phase 3	Vendor	0.00	8.80	HHDT,MHDT
Phase 3	Hauling	0.00	20.0	HHDT
Phase 3	Onsite truck	—	—	HHDT
Phase 4	—	—	—	—
Phase 4	Worker	10.0	14.3	LDA,LDT1,LDT2
Phase 4	Vendor	0.00	8.80	HHDT,MHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Phase 4	Hauling	0.00	20.0	HHDT
Phase 4	Onsite truck	—	—	HHDT
Phase 5	—	—	—	—
Phase 5	Worker	10.0	14.3	LDA,LDT1,LDT2
Phase 5	Vendor	0.00	8.80	HHDT,MHDT
Phase 5	Hauling	0.00	20.0	HHDT
Phase 5	Onsite truck	—	—	HHDT
Demobilization - Year 1	—	—	—	—
Demobilization - Year 1	Worker	10.0	14.3	LDA,LDT1,LDT2
Demobilization - Year 1	Vendor	0.00	8.80	HHDT,MHDT
Demobilization - Year 1	Hauling	0.00	20.0	HHDT
Demobilization - Year 1	Onsite truck	—	—	HHDT
Demobilization - Year 2	—	—	—	—
Demobilization - Year 2	Worker	10.0	14.3	LDA,LDT1,LDT2
Demobilization - Year 2	Vendor	0.00	8.80	HHDT,MHDT
Demobilization - Year 2	Hauling	0.00	20.0	HHDT
Demobilization - Year 2	Onsite truck	—	—	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 (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Vegetation Clearing - Year 1	0.00	50.0	0.00	0.00	—
Vegetation Clearing - Year 2	0.00	50.0	0.00	0.00	—
Demobilization - Year 1	0.00	0.00	26.0	0.00	—
Demobilization - Year 2	0.00	0.00	26.0	0.00	—
Phase 1	0.00	0.00	26.0	0.00	—
Phase 2	0.00	0.00	26.0	0.00	—
Phase 3	0.00	0.00	26.0	0.00	—
Phase 4	0.00	0.00	26.0	0.00	—
Phase 5	0.00	0.00	26.0	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
User Defined Linear	13.0	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	375	0.01	< 0.005
2026	0.00	375	0.01	< 0.005

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	19.3	annual days of extreme heat
Extreme Precipitation	5.30	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	1	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	1	1	1	2
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	35.2
AQ-PM	31.8
AQ-DPM	31.2
Drinking Water	16.8
Lead Risk Housing	6.50
Pesticides	32.7
Toxic Releases	23.3
Traffic	8.10
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	47.4
Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	83.0
Solid Waste	0.00
Sensitive Population	—
Asthma	52.1
Cardio-vascular	58.6
Low Birth Weights	42.5
Socioeconomic Factor Indicators	—
Education	29.3
Housing	8.86
Linguistic	35.3
Poverty	23.2
Unemployment	41.8

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	85.57679969
Employed	73.95098165
Median HI	77.13332478
Education	—
Bachelor's or higher	71.01244707
High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	54.54895419
Active commuting	48.54356474
Social	—
2-parent households	51.99538047
Voting	94.94418067
Neighborhood	—
Alcohol availability	78.85281663
Park access	37.55934813
Retail density	25.31759271
Supermarket access	30.8481971
Tree canopy	88.04054921
Housing	—
Homeownership	66.95752598
Housing habitability	73.01424355
Low-inc homeowner severe housing cost burden	62.17117926
Low-inc renter severe housing cost burden	52.0980367
Uncrowded housing	85.268831
Health Outcomes	—
Insured adults	67.86860003
Arthritis	8.9
Asthma ER Admissions	43.9

Indicator	Result for Project Census Tract
High Blood Pressure	4.6
Cancer (excluding skin)	11.3
Asthma	69.3
Coronary Heart Disease	19.3
Chronic Obstructive Pulmonary Disease	45.1
Diagnosed Diabetes	29.7
Life Expectancy at Birth	81.2
Cognitively Disabled	54.2
Physically Disabled	62.2
Heart Attack ER Admissions	58.2
Mental Health Not Good	82.3
Chronic Kidney Disease	27.1
Obesity	67.3
Pedestrian Injuries	75.0
Physical Health Not Good	61.7
Stroke	29.9
Health Risk Behaviors	—
Binge Drinking	91.6
Current Smoker	75.7
No Leisure Time for Physical Activity	65.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	98.2
Elderly	7.7
English Speaking	59.9
Foreign-born	30.4
Outdoor Workers	43.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	66.1
Traffic Density	3.8
Traffic Access	59.3
Other Indices	—

Indicator	Result for Project Census Tract
Hardship	22.0
Other Decision Support	—
2016 Voting	84.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	19.0
Healthy Places Index Score for Project Location (b)	73.0
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	Phasing information provided by USACE
Construction: Off-Road Equipment	Construction equipment information was provided by USACE.
Construction: Trips and VMT	Defaults used except for number of workers trips per day.
Construction: Dust From Material Movement	Information provided by USACE.

Master Sheet Data

Number	Vessel	Type	Engine	Tier	Hrs/Shift	Hourly Rate NOx (lbs/Hr)	Hourly Rate PM10 (lbs/Hr)	Hourly Rate PM2.5 (lbs/Hr)	Source	Daily Rate NOx (lbs/Day)	Daily Rate PM10 (lbs/Day)	Daily Rate PM2.5 (lbs/Day)	Effective Daily Emissions NOx (lbs/day)*	Effective Daily Emissions PM10 (lbs/day)*	Effective Daily Emissions PM2.5 (lbs/day)*
1	65D	Cranes	Main	0	8	2.18	0.11	0.11	MM	17.46	0.89	0.84	21.825	1.110	1.056
2	88B	Cranes	Main	4	8	0.08	0.00	0.00	MM	0.60	0.02	0.02	0.752	0.026	0.024
3	4100	Cranes	Main	3	8	0.54	0.03	0.03	MM	4.35	0.22	0.21	5.437	0.277	0.261
4	895	Cranes	Main	2	8	2.55	0.07	0.07	MM	20.39	0.59	0.56	25.492	0.740	0.697
5	325	Excavators	Main	4	8	0.04	0.00	0.00	MM	0.31	0.01	0.01	0.390	0.014	0.013
6	326	Excavators	Main	4	8	0.04	0.00	0.00	MM	0.36	0.01	0.01	0.449	0.016	0.015
7	330LX	Excavators	Main	3	8	0.62	0.03	0.03	MM	4.99	0.27	0.25	6.243	0.332	0.314
8	335	Excavators	Main	4	8	0.06	0.00	0.00	MM	0.49	0.02	0.02	0.611	0.021	0.020
9	335	Excavators	Main	4	8	0.06	0.00	0.00	MM	0.49	0.02	0.02	0.611	0.021	0.020
10	335 Zero Swing	Excavators	Main	4	8	0.06	0.00	0.00	MM	0.49	0.02	0.02	0.611	0.021	0.020
11	336E	Excavators	Main	4	8	0.07	0.00	0.00	MM	0.55	0.02	0.02	0.685	0.024	0.022
12	349	Excavators	Main	4	8	0.10	0.00	0.00	MM	0.80	0.03	0.03	0.997	0.037	0.035
13	390D	Excavators	Main	4	8	0.13	0.00	0.00	MM	1.03	0.04	0.04	1.291	0.049	0.045
14	395	Excavators	Main	4	8	0.12	0.00	0.00	MM	0.97	0.03	0.03	1.207	0.042	0.039
15	730	Off-Highway Trucks	Main	4	8	0.09	0.00	0.00	MM	0.69	0.03	0.02	0.866	0.032	0.030
16	D4K	Crawler Tractors	Main	4	8	0.11	0.00	0.00	MM	0.87	0.01	0.01	1.081	0.008	0.008
17	D5K	Crawler Tractors	Main	4	8	0.12	0.00	0.00	MM	0.99	0.01	0.01	1.236	0.009	0.009
18	563	Rollers	Main	4	8	0.03	0.00	0.00	MM	0.25	0.01	0.01	0.312	0.011	0.010
19	950	Tractors/Loaders/Backhoes	Main	4	8	0.05	0.00	0.00	MM	0.43	0.02	0.01	0.538	0.019	0.018
20	966K	Tractors/Loaders/Backhoes	Main	4	8	0.34	0.00	0.00	MM	2.72	0.02	0.02	3.402	0.027	0.025
21	140H	Graders	Main	1	8	1.24	0.09	0.09	MM	9.94	0.72	0.69	12.431	0.901	0.862
22	299	Skid Steer Loaders	Main	3	8	0.21	0.01	0.01	MM	1.68	0.12	0.11	2.105	0.145	0.135
23	299	Skid Steer Loaders	Main	4	8	0.10	0.00	0.00	MM	0.79	0.01	0.01	0.986	0.007	0.007
24	9k	Rough Terrain Forklifts	Main	4	8	0.13	0.00	0.00	MM	1.05	0.01	0.01	1.308	0.009	0.008
25	Sarah Reed	Tug Boats	Main	M2	24	11.30	0.44	0.40	HC	271.09	10.64	9.54	11.296	0.443	0.397
26	Linda T	Tow Boats / Push Boats	Main	M3	2	2.02	0.04	0.03	HC	4.03	0.08	0.07	2.017	0.038	0.034
27	Linda T	Tow Boats / Push Boats	Main	M3	2	2.03	0.04	0.04	HC	4.07	0.08	0.07	2.033	0.039	0.035
28	Terri L Brusco	Tug Boats	Main	Brusco	0	16.09	0.15	0.13	HC	0.00	0.00	0.00	16.085	0.639	0.572
29	Heidi Brusco	Tug Boats	Main	Brusco	24	14.22	0.30	0.27	HC	341.16	7.31	6.58	14.215	0.305	0.274
30	Sea W	Tow Boats / Push Boats	Main	M3	2	4.29	0.08	0.07	HC	8.57	0.16	0.14	4.287	0.079	0.072
31	TM 20	Crew and Supply Generator	Aux	4	10	0.31	0.01	0.01	HC	3.14	0.07	0.06	0.314	0.007	0.006
32	TM 20	Hoist_swing_winch	Aux	4	1	0.20	0.00	0.00	HC	0.20	0.00	0.00	0.197	0.001	0.001
33	Crane Barge 1	Hoist_swing_winch	Aux	4	1	0.42	0.02	0.02	HC	0.42	0.02	0.02	0.424	0.020	0.018
34	Kelso	Hoist_swing_winch	Aux	4	1	0.18	0.00	0.00	HC	0.18	0.00	0.00	0.183	0.001	0.001
35	Sarah Reed	Tug Boats Generator	Aux	3	24	0.39	0.02	0.01	HC	9.43	0.39	0.35	0.393	0.016	0.015
36	Linda T	Tow Boats / Push Boats Generator	Aux	3	4	0.12	0.00	0.00	HC	0.48	0.02	0.02	0.121	0.005	0.004
37	Terri L Brusco	Tug Boats Generator	Aux	Brusco	0	0.45	0.03	0.02	HC	0.00	0.00	0.00	0.452	0.025	0.023
38	Heidi Brusco	Tug Boats Generator	Aux	Brusco	12	0.35	0.01	0.01	HC	4.15	0.10	0.09	0.346	0.008	0.007
39	Heidi Brusco	Tug Boats Generator	Aux	Brusco	12	0.41	0.01	0.01	HC	4.91	0.11	0.10	0.409	0.009	0.008

Notes: * = Values pulled from Mitigation Model and altered to make project specific

Phase 1

#	Air District	Vessel	Type	Engine	Tier	Hrs/ Shift	Hourly Rate ROG (lbs/HR)	Hourly Rate NOx (lbs/Hr)	Hourly Rate PM10 (lbs/Hr)	Hourly Rate PM2.5 (lbs/Hr)	Source	Daily Rate ROG (lbs/Day)	Daily Rate NOx (lbs/Day)	Daily Rate PM10 (lbs/Day)	Daily Rate PM2.5 (lbs/Day)
26	SMAQMD	Linda T	Tow Boats / Push Boats	Main	M3	2	0.266	2.02	0.04	0.03	HC	0.53	4.03	0.08	0.07
27	SMAQMD	Linda T	Tow Boats / Push Boats	Main	M3	2	0.27	2.03	0.04	0.04	HC	0.54	4.07	0.08	0.07
36	SMAQMD	Linda T	Tow Boats / Push Boats Generator	Aux	3	4	0.041	0.12	0.00	0.00	HC	0.16	0.48	0.02	0.02
30	SMAQMD	Sea W	Tow Boats / Push Boats	Main	M3	2	0.56	4.29	0.08	0.07	HC	1.12	8.57	0.16	0.14
31	SMAQMD	TM 20	Crew and Supply Generator	Aux	4	10	0.063	0.31	0.01	0.01	HC	0.63	3.14	0.07	0.06
32	SMAQMD	TM 20	Hoist_swing_winch	Aux	4	1	0.007	0.20	0.00	0.00	HC	0.01	0.20	0.00	0.00
33	SMAQMD	Crane Barge 1	Hoist_swing_winch	Aux	4	1	0.016	0.42	0.02	0.02	HC	0.02	0.42	0.02	0.02
34	SMAQMD	Sub Crane Barge	Hoist_swing_winch	Aux	4	1	0.007	0.18	0.00	0.00	HC	0.01	0.18	0.00	0.00
25	SMAQMD	Sarah Reed	Tug Boats	Main	M2	24	1.206	11.30	0.44	0.40	HC	28.94	271.09	10.64	9.54
35	SMAQMD	Sarah Reed	Tug Boats Generator	Aux	3	24	0.07	0.39	0.02	0.01	HC	1.68	9.43	0.39	0.35
29	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats	Main	Brusco	12	1.992	14.22	0.30	0.27	HC	23.90	170.58	3.65	3.29
38	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats Generator	Aux	Brusco	12	0.059	0.35	0.01	0.01	HC	0.71	4.15	0.10	0.09
39	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats Generator	Aux	Brusco	12	0.068	0.41	0.01	0.01	HC	0.82	4.91	0.11	0.10

	ROG	NOx	PM10	PM2.5
Total	59.07	481.26	15.31	13.76
Limits	0.00	85.00	80.00	82.00
Threshold	0.00	-396.26	64.69	68.24
BAAQMD	5.77	40.78	0.88	0.79
SMAQMD	53.30	440.48	14.44	12.97

Phase 2

#	Air District	Vessel	Type	Engine	Tier	Hrs/ Shift	Hourly Rate ROG (lbs/hr)	Hourly Rate NOx (lbs/Hr)	Hourly Rate PM10 (lbs/Hr)	Hourly Rate PM2.5 (lbs/Hr)	Source	ROG (lbs/Day)	Daily Rate NOx (lbs/Day)	Daily Rate PM10 (lbs/Day)	Daily Rate PM2.5 (lbs/Day)
26	SMAQMD	Linda T	Tow Boats / Push Boats	Main	M3	4	0.266	2.02	0.04	0.03	HC	1.06	8.07	0.15	0.14
27	SMAQMD	Linda T	Tow Boats / Push Boats	Main	M3	4	0.27	2.03	0.04	0.04	HC	1.08	8.13	0.15	0.14
36	SMAQMD	Linda T	Tow Boats / Push Boats Generator	Aux	3	4	0.041	0.12	0.00	0.00	HC	0.16	0.48	0.02	0.02
30	SMAQMD	Sea W	Tow Boats / Push Boats	Main	M3	2	0.56	4.29	0.08	0.07	HC	1.12	8.57	0.16	0.14
31	SMAQMD	TM 20	Crew and Supply Generator	Aux	4	10	0.063	0.31	0.01	0.01	HC	0.63	3.14	0.07	0.06
32	SMAQMD	TM 20	Hoist_swing_winch	Aux	4	1	0.007	0.20	0.00	0.00	HC	0.01	0.20	0.00	0.00
33	SMAQMD	Crane Barge 1	Hoist_swing_winch	Aux	4	1	0.016	0.42	0.02	0.02	HC	0.02	0.42	0.02	0.02
25	SMAQMD	Sarah Reed	Tug Boats	Main	M2	24	0.007	11.30	0.44	0.40	HC	0.17	271.09	10.64	9.54
35	SMAQMD	Sarah Reed	Tug Boats Generator	Aux	3	24	1.206	0.39	0.02	0.01	HC	28.94	9.43	0.39	0.35
29	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats	Main	Brusco	12	0.07	14.22	0.30	0.27	HC	0.84	170.58	3.65	3.29
38	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats Generator	Aux	Brusco	12	1.992	0.35	0.01	0.01	HC	23.90	4.15	0.10	0.09
39	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats Generator	Aux	Brusco	12	0.059	0.41	0.01	0.01	HC	0.71	4.91	0.11	0.10

Total		489.18	15.46	13.89
Limits		85.00	80.00	82.00
Threshold		-404.18	64.54	68.11
BAAQMD	5.78	40.78	0.88	0.79
SMAQMD	52.87	448.40	14.59	13.10

Phase 3

#	Air District	Vessel	Type	Engine	Tier	Hrs/ Shift	ROG (lbs/hr)	Hourly Rate NOx (lbs/Hr)	Hourly Rate PM10 (lbs/Hr)	Hourly Rate PM2.5 (lbs/Hr)	Source	ROG (lbs/Day)	Daily Rate NOx (lbs/Day)	Daily Rate PM10 (lbs/Day)	Daily Rate PM2.5 (lbs/Day)
26	SMAQMD	Linda T	Tow Boats / Push Boats	Main	M3	4	0.266	2.02	0.04	0.03	HC	1.06	8.07	0.15	0.14
27	SMAQMD	Linda T	Tow Boats / Push Boats	Main	M3	4	0.27	2.03	0.04	0.04	HC	1.08	8.13	0.15	0.14
36	SMAQMD	Linda T	Tow Boats / Push Boats Generator	Aux	3	4	0.041	0.12	0.00	0.00	HC	0.16	0.48	0.02	0.02
30	SMAQMD	Sea W	Tow Boats / Push Boats	Main	M3	2	0.56	4.29	0.08	0.07	HC	1.12	8.57	0.16	0.14
31	SMAQMD	TM 20	Crew and Supply Generator	Aux	4	10	0.063	0.31	0.01	0.01	HC	0.63	3.14	0.07	0.06
32	SMAQMD	TM 20	Hoist_swing_winch	Aux	4	1	0.007	0.20	0.00	0.00	HC	0.01	0.20	0.00	0.00
33	SMAQMD	Crane Barge 1	Hoist_swing_winch	Aux	4	1	0.016	0.42	0.02	0.02	HC	0.02	0.42	0.02	0.02
34	SMAQMD	Kelso	Hoist_swing_winch	Aux	4	1	0.007	0.18	0.00	0.00	HC	0.01	0.18	0.00	0.00
25	SMAQMD	Sarah Reed	Tug Boats	Main	M2	24	0.007	11.30	0.44	0.40	HC	0.17	271.09	10.64	9.54
35	SMAQMD	Sarah Reed	Tug Boats Generator	Aux	3	24	1.206	0.39	0.02	0.01	HC	28.94	9.43	0.39	0.35
29	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats	Main	Brusco	12	0.07	14.22	0.30	0.27	HC	0.84	170.58	3.65	3.29
38	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats Generator	Aux	Brusco	12	1.992	0.35	0.01	0.01	HC	23.90	4.15	0.10	0.09
39	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats Generator	Aux	Brusco	12	0.059	0.41	0.01	0.01	HC	0.71	4.91	0.11	0.10

Total		489.36	15.46	13.90
Limits		85.00	80.00	82.00
Threshold		-404.36	64.54	68.10
BAAQMD	5.78	40.78	0.88	0.79
SMAQMD	52.87	448.58	14.59	13.11

Phase 4

#	Air District	Vessel	Type	Engine	Tier	Hrs/ Shift	Hourly Rate ROG (lbs/hr)	Hourly Rate NOx (lbs/Hr)	Hourly Rate PM10 (lbs/Hr)	Hourly Rate PM2.5 (lbs/Hr)	Source	ROG (lbs/Days)	Daily Rate NOx (lbs/Day)	Daily Rate PM10 (lbs/Day)	Daily Rate PM2.5 (lbs/Day)
26	SMAQMD	Linda T	Tow Boats / Push Boats	Main	M3	4	0.266	2.02	0.04	0.03	HC	1.06	8.07	0.15	0.14
27	SMAQMD	Linda T	Tow Boats / Push Boats	Main	M3	4	0.27	2.03	0.04	0.04	HC	1.08	8.13	0.15	0.14
36	SMAQMD	Linda T	w Boats / Push Boats Genera	Aux	3	4	0.041	0.12	0.00	0.00	HC	0.16	0.48	0.02	0.02
30	SMAQMD	Sea W	Tow Boats / Push Boats	Main	M3	2	0.56	4.29	0.08	0.07	HC	1.12	8.57	0.16	0.14
31	SMAQMD	TM 20	Crew and Supply Generator	Aux	4	10	0.063	0.31	0.01	0.01	HC	0.63	3.14	0.07	0.06
32	SMAQMD	TM 20	Hoist_swing_winch	Aux	4	1	0.007	0.20	0.00	0.00	HC	0.01	0.20	0.00	0.00
33	SMAQMD	Crane Barge 1	Hoist_swing_winch	Aux	4	1	0.016	0.42	0.02	0.02	HC	0.02	0.42	0.02	0.02
34	SMAQMD	Kelso	Hoist_swing_winch	Aux	4	1	0.007	0.18	0.00	0.00	HC	0.01	0.18	0.00	0.00
25	SMAQMD	Sarah Reed	Tug Boats	Main	M2	24	0.007	11.30	0.44	0.40	HC	0.17	271.09	10.64	9.54
35	SMAQMD	Sarah Reed	Tug Boats Generator	Aux	3	24	1.206	0.39	0.02	0.01	HC	28.94	9.43	0.39	0.35
29	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats	Main	Brusco	12	0.07	14.22	0.30	0.27	HC	0.84	170.58	3.65	3.29
38	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats Generator	Aux	Brusco	12	1.992	0.35	0.01	0.01	HC	23.90	4.15	0.10	0.09
39	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats Generator	Aux	Brusco	12	0.059	0.41	0.01	0.01	HC	0.71	4.91	0.11	0.10

Total		489.36	15.46	13.90
Limits		85.00	80.00	82.00
Threshold		-404.36	64.54	68.10
BAAQMD	5.78	40.78	0.88	0.79
SMAQMD	52.87	448.58	14.59	13.11

Phase 5

#	Air District	Vessel	Type	Engine	Tier	Hrs/ Shift	ROG (lbs/hr)	Hourly Rate NOx (lbs/Hr)	Hourly Rate PM10 (lbs/Hr)	Hourly Rate PM2.5 (lbs/Hr)	Source	ROG (lbs/day)	Daily Rate NOx (lbs/Day)	Daily Rate PM10 (lbs/Day)	Daily Rate PM2.5 (lbs/Day)
26	SMAQMD	Linda T	Tow Boats / Push Boats	Main	M3	4	0.266	2.02	0.04	0.03	HC	1.06	8.07	0.15	0.14
27	SMAQMD	Linda T	Tow Boats / Push Boats	Main	M3	4	0.27	2.03	0.04	0.04	HC	1.08	8.13	0.15	0.14
36	SMAQMD	Linda T	Tow Boats / Push Boats Generator	Aux	3	4	0.041	0.12	0.00	0.00	HC	0.16	0.48	0.02	0.02
30	SMAQMD	Sea W	Tow Boats / Push Boats	Main	M3	2	0.56	4.29	0.08	0.07	HC	1.12	8.57	0.16	0.14
31	SMAQMD	TM 20	Crew and Supply Generator	Aux	4	10	0.063	0.31	0.01	0.01	HC	0.63	3.14	0.07	0.06
32	SMAQMD	TM 20	Hoist_swing_winch	Aux	4	1	0.007	0.20	0.00	0.00	HC	0.01	0.20	0.00	0.00
33	SMAQMD	Crane Barge 1	Hoist_swing_winch	Aux	4	1	0.016	0.42	0.02	0.02	HC	0.02	0.42	0.02	0.02
34	SMAQMD	Kelso	Hoist_swing_winch	Aux	4	1	0.007	0.18	0.00	0.00	HC	0.01	0.18	0.00	0.00
25	SMAQMD	Sarah Reed	Tug Boats	Main	M2	24	0.007	11.30	0.44	0.40	HC	0.17	271.09	10.64	9.54
35	SMAQMD	Sarah Reed	Tug Boats Generator	Aux	3	24	1.206	0.39	0.02	0.01	HC	28.94	9.43	0.39	0.35
29	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats	Main	Brusco	12	0.07	14.22	0.30	0.27	HC	0.84	170.58	3.65	3.29
38	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats Generator	Aux	Brusco	12	1.992	0.35	0.01	0.01	HC	23.90	4.15	0.10	0.09
39	77.30% in BAAQMD, 22.70% in SMAQMD	Heidi Brusco	Tug Boats Generator	Aux	Brusco	12	0.059	0.41	0.01	0.01	HC	0.71	4.91	0.11	0.10
											Total		489.36	15.46	13.90
											Limits		85.00	80.00	82.00
											Threshold		-404.36	64.54	68.10
											BAAQMD	5.78	40.78	0.88	0.79
											SMAQMD	52.87	448.58	14.59	13.11

Air Quality Analysis for Barge Emissions

SMAQMD

Phase	Duration	Daily ROG (Lbs/Day)	Daily NOx (Lbs/Day)	Daily PM10 (Lbs/Day)	Daily PM2.5 (Lbs/Day)	Annual ROG (Tons/Year)	Annual NOx (Tons/Year)	Annual PM10 (Tons/Year	Annual PM2.5 (Tons/Year)
1	24	53.30	440.48	14.44	12.97	0.64	5.29	0.17	0.16
2	24	52.87	448.40	14.59	13.10	0.63	5.38	0.18	0.16
3	60	52.87	448.58	14.59	13.11	1.59	13.46	0.44	0.39
Year 1 - Max Emissions	**108**	**53.30**	**448.58**	**14.59**	**13.11**	**2.86**	**24.12**	**0.79**	**0.71**
4	54	52.87	448.58	14.59	13.11	1.43	12.11	0.39	0.35
5	54	52.87	448.58	14.59	13.11	1.43	12.11	0.39	0.35
Year 2 - Max Emissions	**108**	**52.87**	**448.58**	**14.59**	**13.11**	**2.86**	**24.22**	**0.79**	**0.71**
Threshold Limits		None	85.00	80.00	82.00	None	None	14.6	15

BAAQMD

Phase	Duration	Daily ROG (Lbs/Day)	Daily NOx (Lbs/Day)	Daily PM10 (Lbs/Day)	Daily PM2.5 (Lbs/Day)	Annual ROG (Tons/Year)	Annual NOx (Tons/Year)	Annual PM10 (Tons/Year	Annual PM2.5 (Tons/Year)
1	24	5.77	40.78	0.88	0.79	0.07	0.49	0.01	0.01
2	24	5.78	40.78	0.88	0.79	0.07	0.49	0.01	0.01
3	60	5.78	40.78	0.88	0.79	0.17	1.22	0.03	0.02
Year 1 - Max Emissions	**108**	**5.78**	**40.78**	**0.88**	**0.79**	**0.31**	**2.20**	**0.05**	**0.04**
4	54	5.78	40.78	0.88	0.79	0.16	1.10	0.02	0.02
5	54	5.78	40.78	0.88	0.79	0.16	1.10	0.02	0.02
Year 2 - Max Emissions	**108**	**5.78**	**40.78**	**0.88**	**0.79**	**0.31**	**2.20**	**0.05**	**0.04**
Threshold Limits		54.00	54.00	82.00	54.00	10.00	10	15	10

Note: Phases 1, 2, and 3 would be constructed in Year 1, and phases 4 and 5 would be constructed in Year 2.

American River Mitigation Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	American River Mitigation
Construction Start Date	7/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	36.4
Location	38.60498194560944, -121.48711423868963
County	Sacramento
City	Sacramento
Air District	Sacramento Metropolitan AQMD
Air Basin	Sacramento Valley
TAZ	528
EDFZ	13
Electric Utility	Sacramento Municipal Utility District
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.17

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
User Defined Recreational	1.00	User Defined Unit	120	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-B	Water Active Demolition Sites
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	10.3	4.82	124	67.6	0.66	2.41	43.2	45.6	2.29	12.8	15.1	—	56,407	56,407	5.05	8.30	108	59,114
Mit.	7.04	2.17	98.2	68.7	0.66	1.00	29.0	30.0	1.00	7.75	8.75	—	56,407	56,407	5.05	8.30	108	59,114
% Reduced	32%	55%	21%	-2%	—	58%	33%	34%	56%	39%	42%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.96	2.42	61.6	32.1	0.30	1.30	19.3	20.6	1.23	8.36	9.58	—	25,758	25,758	2.30	3.77	1.27	26,939
Mit.	3.21	0.98	48.0	33.5	0.30	0.46	11.2	11.6	0.46	4.23	4.69	—	25,758	25,758	2.30	3.77	1.27	26,939
% Reduced	35%	59%	22%	-4%	—	65%	42%	44%	63%	49%	51%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Unmit.	2.95	1.35	37.3	18.7	0.19	0.72	10.6	11.3	0.68	4.38	5.06	—	16,325	16,325	1.47	2.43	13.6	17,101
Mit.	2.04	0.61	30.3	19.3	0.19	0.29	6.46	6.75	0.29	2.33	2.62	—	16,325	16,325	1.47	2.43	13.6	17,101
% Reduced	31%	55%	19%	-3%	—	59%	39%	40%	57%	47%	48%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.54	0.25	6.82	3.41	0.03	0.13	1.93	2.06	0.12	0.80	0.92	—	2,703	2,703	0.24	0.40	2.26	2,831
Mit.	0.37	0.11	5.53	3.53	0.03	0.05	1.18	1.23	0.05	0.43	0.48	—	2,703	2,703	0.24	0.40	2.26	2,831
% Reduced	31%	55%	19%	-3%	—	59%	39%	40%	57%	47%	48%	—	—	—	—	—	—	—

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	10.3	4.82	124	67.6	0.66	2.41	43.2	45.6	2.29	12.8	15.1	—	56,407	56,407	5.05	8.30	108	59,114
2025	5.66	3.00	60.5	40.4	0.18	1.56	19.3	20.9	1.46	8.37	9.84	—	26,644	26,644	2.34	3.65	48.8	27,838
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.96	2.42	61.6	32.1	0.30	1.30	19.3	20.6	1.23	8.36	9.58	—	25,758	25,758	2.30	3.77	1.27	26,939
2025	4.39	1.92	55.6	27.8	0.16	1.11	19.2	20.4	1.06	8.35	9.41	—	24,637	24,637	2.26	3.63	1.26	25,776
erage Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.95	1.35	37.3	18.7	0.19	0.72	10.6	11.3	0.68	4.38	5.06	—	16,325	16,325	1.47	2.43	13.6	17,101
2025	2.21	1.02	26.9	14.4	0.08	0.57	9.14	9.71	0.54	3.97	4.51	—	11,920	11,920	1.09	1.73	10.0	12,472
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.54	0.25	6.82	3.41	0.03	0.13	1.93	2.06	0.12	0.80	0.92	—	2,703	2,703	0.24	0.40	2.26	2,831
2025	0.40	0.19	4.91	2.62	0.01	0.10	1.67	1.77	0.10	0.72	0.82	—	1,973	1,973	0.18	0.29	1.66	2,065

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	7.04	2.17	98.2	68.7	0.66	1.00	29.0	30.0	1.00	7.75	8.75	—	56,407	56,407	5.05	8.30	108	59,114
2025	3.25	1.04	43.7	42.6	0.18	0.48	11.2	11.7	0.48	4.25	4.73	—	26,644	26,644	2.34	3.65	48.8	27,838
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	3.21	0.98	48.0	33.5	0.30	0.46	11.2	11.6	0.46	4.23	4.69	—	25,758	25,758	2.30	3.77	1.27	26,939
2025	3.00	0.78	45.0	28.7	0.16	0.45	11.1	11.6	0.45	4.22	4.67	—	24,637	24,637	2.26	3.63	1.26	25,776
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.04	0.61	30.3	19.3	0.19	0.29	6.46	6.75	0.29	2.33	2.62	—	16,325	16,325	1.47	2.43	13.6	17,101
2025	1.45	0.40	21.2	14.9	0.08	0.22	5.27	5.48	0.22	2.00	2.22	—	11,920	11,920	1.09	1.73	10.0	12,472
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.37	0.11	5.53	3.53	0.03	0.05	1.18	1.23	0.05	0.43	0.48	—	2,703	2,703	0.24	0.40	2.26	2,831
2025	0.27	0.07	3.88	2.71	0.01	0.04	0.96	1.00	0.04	0.37	0.41	—	1,973	1,973	0.18	0.29	1.66	2,065

3. Construction Emissions Details

3.1. Demolition (2024) - 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 Equipmen	1.49	1.26	11.9	12.0	0.02	0.54	—	0.54	0.50	—	0.50	—	1,987	1,987	0.08	0.02	—	1,993

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Demolition	—	—	—	—	—	—	16.7	16.7	—	2.53	2.53	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.02	0.01	0.13	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	21.8	21.8	< 0.005	< 0.005	—	21.8
Demolition	—	—	—	—	—	—	0.18	0.18	—	0.03	0.03	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.60	3.60	< 0.005	< 0.005	—	3.62
Demolition	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.32	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	57.9	57.9	< 0.005	< 0.005	0.24	—
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	—
Hauling	1.79	0.45	26.5	9.86	0.17	0.25	3.56	3.81	0.25	0.95	1.20	—	14,190	14,190	1.34	2.29	29.6	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.58	0.58	< 0.005	< 0.005	< 0.005	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—
Hauling	0.02	< 0.005	0.31	0.11	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	155	155	0.01	0.03	0.14	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	—
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	—
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.7	25.7	< 0.005	< 0.005	0.02	—

3.2. Demolition (2024) - 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 Equipmen	0.19	0.19	0.97	11.0	0.02	0.04	—	0.04	0.04	—	0.04	—	1,987	1,987	0.08	0.02	—	1,993
Demolitio n	—	—	—	—	—	—	10.7	10.7	—	1.62	1.62	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	0.01	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.8	21.8	< 0.005	< 0.005	—	21.8
Demolitio n	—	—	—	—	—	—	0.12	0.12	—	0.02	0.02	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.60	3.60	< 0.005	< 0.005	—	3.62
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.32	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	57.9	57.9	< 0.005	< 0.005	0.24	—
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	—
Hauling	1.79	0.45	26.5	9.86	0.17	0.25	3.56	3.81	0.25	0.95	1.20	—	14,190	14,190	1.34	2.29	29.6	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.58	0.58	< 0.005	< 0.005	< 0.005	—
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	—
Hauling	0.02	< 0.005	0.31	0.11	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	155	155	0.01	0.03	0.14	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	—
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	—
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.7	25.7	< 0.005	< 0.005	0.02	—

3.3. Mobilization - Year 1 (2024) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.32	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	57.9	57.9	< 0.005	< 0.005	0.24	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.16	1.16	< 0.005	< 0.005	< 0.005	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.4. Mobilization - Year 1 (2024) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.32	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	57.9	57.9	< 0.005	< 0.005	0.24	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.16	1.16	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.5. Clearing and Grubbing (2024) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	1.40	1.18	11.6	10.3	0.02	0.52	—	0.52	0.47	—	0.47	—	1,668	1,668	0.07	0.01	—	1,674
Dust From Material Movemen	—	—	—	—	—	—	6.55	6.55	—	3.37	3.37	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.05	0.04	0.41	0.37	< 0.005	0.02	—	0.02	0.02	—	0.02	—	59.4	59.4	< 0.005	< 0.005	—	59.6
Dust From Material Movemen	—	—	—	—	—	—	0.23	0.23	—	0.12	0.12	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.01	0.01	0.08	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.84	9.84	< 0.005	< 0.005	—	9.87
Dust From Material Movemen	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.32	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	57.9	57.9	< 0.005	< 0.005	0.24	—
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	—
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	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.88	1.88	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.6. Clearing and Grubbing (2024) - 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 Equipmen	0.16	0.16	0.82	8.76	0.02	0.03	—	0.03	0.03	—	0.03	—	1,668	1,668	0.07	0.01	—	1,674
Dust From Material Movemen	—	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	0.01	0.01	0.03	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	59.4	59.4	< 0.005	< 0.005	—	59.6
Dust From Material Movemen	—	—	—	—	—	—	0.09	0.09	—	0.05	0.05	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	0.01	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.84	9.84	< 0.005	< 0.005	—	9.87
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.32	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	57.9	57.9	< 0.005	< 0.005	0.24	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.88	1.88	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.7. Hazardous Materials/Debris Handling (2024) - 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 Equipmen	0.24	0.20	1.54	3.56	0.01	0.08	—	0.08	0.07	—	0.07	—	609	609	0.02	< 0.005	—	611
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.24	0.20	1.54	3.56	0.01	0.08	—	0.08	0.07	—	0.07	—	609	609	0.02	< 0.005	—	611
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.06	0.05	0.40	0.92	< 0.005	0.02	—	0.02	0.02	—	0.02	—	157	157	0.01	< 0.005	—	157
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	0.01	0.01	0.07	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.0	26.0	< 0.005	< 0.005	—	26.0
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.0	29.0	< 0.005	< 0.005	0.12	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	25.7	25.7	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.79	6.79	< 0.005	< 0.005	0.01	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.12	1.12	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.8. Hazardous Materials/Debris Handling (2024) - 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 Equipmen	0.06	0.06	0.30	4.27	0.01	0.01	—	0.01	0.01	—	0.01	—	609	609	0.02	< 0.005	—	611
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.06	0.06	0.30	4.27	0.01	0.01	—	0.01	0.01	—	0.01	—	609	609	0.02	< 0.005	—	611
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.01	0.01	0.08	1.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	157	157	0.01	< 0.005	—	157
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	< 0.005	< 0.005	0.01	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.0	26.0	< 0.005	< 0.005	—	26.0
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.0	29.0	< 0.005	< 0.005	0.12	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	25.7	25.7	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.79	6.79	< 0.005	< 0.005	0.01	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.12	1.12	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.9. Import Fill - Year 1 (2024) - 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 Equipmen	1.74	1.46	13.2	11.6	0.02	0.81	—	0.81	0.74	—	0.74	—	1,748	1,748	0.07	0.01	—	1,754
Dust From Material Movemen	—	—	—	—	—	—	13.3	13.3	—	6.77	6.77	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	1.74	1.46	13.2	11.6	0.02	0.81	—	0.81	0.74	—	0.74	—	1,748	1,748	0.07	0.01	—	1,754
Dust From Material Movemen	—	—	—	—	—	—	13.3	13.3	—	6.77	6.77	—	—	—	—	—	—	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.83	0.70	6.31	5.52	0.01	0.38	—	0.38	0.35	—	0.35	—	833	833	0.03	0.01	—	836
Dust From Material Movemen	—	—	—	—	—	—	6.34	6.34	—	3.23	3.23	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	0.15	0.13	1.15	1.01	< 0.005	0.07	—	0.07	0.06	—	0.06	—	138	138	0.01	< 0.005	—	138
Dust From Material Movemen	—	—	—	—	—	—	1.16	1.16	—	0.59	0.59	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.65	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	116	116	< 0.005	< 0.005	0.47	—
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	—
Hauling	2.94	0.73	43.5	16.2	0.28	0.41	5.84	6.25	0.41	1.56	1.98	—	23,279	23,279	2.20	3.75	48.5	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.48	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	103	103	< 0.005	< 0.005	0.01	—
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	—
Hauling	2.93	0.71	46.8	16.3	0.28	0.41	5.84	6.25	0.41	1.56	1.98	—	23,273	23,273	2.20	3.74	1.26	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.23	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.3	50.3	< 0.005	< 0.005	0.10	—
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	—
Hauling	1.40	0.35	21.9	7.74	0.13	0.20	2.73	2.93	0.20	0.73	0.93	—	11,096	11,096	1.05	1.79	9.99	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.33	8.33	< 0.005	< 0.005	0.02	—
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	—
Hauling	0.26	0.06	4.00	1.41	0.02	0.04	0.50	0.54	0.04	0.13	0.17	—	1,837	1,837	0.17	0.30	1.65	—

3.10. Import Fill - Year 1 (2024) - 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 Equipmen	0.17	0.17	0.86	12.3	0.02	0.03	—	0.03	0.03	—	0.03	—	1,748	1,748	0.07	0.01	—	1,754
Dust From Material Movemen	—	—	—	—	—	—	5.19	5.19	—	2.64	2.64	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.17	0.17	0.86	12.3	0.02	0.03	—	0.03	0.03	—	0.03	—	1,748	1,748	0.07	0.01	—	1,754
Dust From Material Movemen	—	—	—	—	—	—	5.19	5.19	—	2.64	2.64	—	—	—	—	—	—	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.08	0.08	0.41	5.85	0.01	0.02	—	0.02	0.02	—	0.02	—	833	833	0.03	0.01	—	836
Dust From Material Movemen	—	—	—	—	—	—	2.47	2.47	—	1.26	1.26	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	0.01	0.01	0.08	1.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	138	138	0.01	< 0.005	—	138
Dust From Material Movemen	—	—	—	—	—	—	0.45	0.45	—	0.23	0.23	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.65	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	116	116	< 0.005	< 0.005	0.47	—
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	—
Hauling	2.94	0.73	43.5	16.2	0.28	0.41	5.84	6.25	0.41	1.56	1.98	—	23,279	23,279	2.20	3.75	48.5	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.48	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	103	103	< 0.005	< 0.005	0.01	—
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	—
Hauling	2.93	0.71	46.8	16.3	0.28	0.41	5.84	6.25	0.41	1.56	1.98	—	23,273	23,273	2.20	3.74	1.26	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.23	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.3	50.3	< 0.005	< 0.005	0.10	—
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	—
Hauling	1.40	0.35	21.9	7.74	0.13	0.20	2.73	2.93	0.20	0.73	0.93	—	11,096	11,096	1.05	1.79	9.99	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.33	8.33	< 0.005	< 0.005	0.02	—
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	—
Hauling	0.26	0.06	4.00	1.41	0.02	0.04	0.50	0.54	0.04	0.13	0.17	—	1,837	1,837	0.17	0.30	1.65	—

3.11. Import Fill - Year 2 (2025) - 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 Equipmen	1.56	1.31	11.5	11.4	0.02	0.70	—	0.70	0.64	—	0.64	—	1,749	1,749	0.07	0.01	—	1,755
Dust From Material Movemen	—	—	—	—	—	—	13.3	13.3	—	6.77	6.77	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	1.56	1.31	11.5	11.4	0.02	0.70	—	0.70	0.64	—	0.64	—	1,749	1,749	0.07	0.01	—	1,755
Dust From Material Movemen	—	—	—	—	—	—	13.3	13.3	—	6.77	6.77	—	—	—	—	—	—	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.74	0.62	5.46	5.45	0.01	0.33	—	0.33	0.31	—	0.31	—	834	834	0.03	0.01	—	836
Dust From Material Movemen	—	—	—	—	—	—	6.34	6.34	—	3.23	3.23	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	0.14	0.11	1.00	0.99	< 0.005	0.06	—	0.06	0.06	—	0.06	—	138	138	0.01	< 0.005	—	138
Dust From Material Movemen	—	—	—	—	—	—	1.16	1.16	—	0.59	0.59	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.60	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	114	114	< 0.005	< 0.005	0.44	—
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	—
Hauling	2.81	0.60	41.1	15.9	0.14	0.41	5.84	6.25	0.41	1.56	1.98	—	22,793	22,793	2.19	3.61	47.9	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.01	—
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	—
Hauling	2.79	0.58	44.1	16.0	0.14	0.41	5.84	6.25	0.41	1.56	1.98	—	22,788	22,788	2.19	3.61	1.25	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	49.3	49.3	< 0.005	< 0.005	0.09	—
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	—
Hauling	1.34	0.28	20.7	7.63	0.07	0.20	2.73	2.93	0.20	0.73	0.93	—	10,865	10,865	1.04	1.72	9.89	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.16	8.16	< 0.005	< 0.005	0.01	—
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	—
Hauling	0.24	0.05	3.78	1.39	0.01	0.04	0.50	0.54	0.04	0.13	0.17	—	1,799	1,799	0.17	0.28	1.64	—

3.12. Import Fill - Year 2 (2025) - 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 Equipmen	0.17	0.17	0.86	12.3	0.02	0.03	—	0.03	0.03	—	0.03	—	1,749	1,749	0.07	0.01	—	1,755
Dust From Material Movemen	—	—	—	—	—	—	5.19	5.19	—	2.64	2.64	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.17	0.17	0.86	12.3	0.02	0.03	—	0.03	0.03	—	0.03	—	1,749	1,749	0.07	0.01	—	1,755
Dust From Material Movemen	—	—	—	—	—	—	5.19	5.19	—	2.64	2.64	—	—	—	—	—	—	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.08	0.08	0.41	5.85	0.01	0.02	—	0.02	0.02	—	0.02	—	834	834	0.03	0.01	—	836
Dust From Material Movemen	—	—	—	—	—	—	2.47	2.47	—	1.26	1.26	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	0.01	0.01	0.08	1.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	138	138	0.01	< 0.005	—	138
Dust From Material Movemen	—	—	—	—	—	—	0.45	0.45	—	0.23	0.23	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.60	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	114	114	< 0.005	< 0.005	0.44	—
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	—
Hauling	2.81	0.60	41.1	15.9	0.14	0.41	5.84	6.25	0.41	1.56	1.98	—	22,793	22,793	2.19	3.61	47.9	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.01	—
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	—
Hauling	2.79	0.58	44.1	16.0	0.14	0.41	5.84	6.25	0.41	1.56	1.98	—	22,788	22,788	2.19	3.61	1.25	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	49.3	49.3	< 0.005	< 0.005	0.09	—
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	—
Hauling	1.34	0.28	20.7	7.63	0.07	0.20	2.73	2.93	0.20	0.73	0.93	—	10,865	10,865	1.04	1.72	9.89	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.16	8.16	< 0.005	< 0.005	0.01	—
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	—
Hauling	0.24	0.05	3.78	1.39	0.01	0.04	0.50	0.54	0.04	0.13	0.17	—	1,799	1,799	0.17	0.28	1.64	—

3.13. Mobilization Year 2 (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.30	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	56.8	56.8	< 0.005	< 0.005	0.22	—
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	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.13	1.13	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.14. Mobilization Year 2 (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.30	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	56.8	56.8	< 0.005	< 0.005	0.22	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.13	1.13	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.15. Demobilization (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.4	50.4	< 0.005	< 0.005	0.01	—
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	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.99	0.99	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.16	0.16	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.16. Demobilization (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.4	50.4	< 0.005	< 0.005	0.01	—
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	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.99	0.99	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.16	0.16	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.17. IWM (2025) - 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 Equipmen	0.42	0.35	2.45	4.93	0.01	0.11	—	0.11	0.10	—	0.10	—	783	783	0.03	0.01	—	786
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.02	0.02	0.13	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	42.9	42.9	< 0.005	< 0.005	—	43.1
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	0.02	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.10	7.10	< 0.005	< 0.005	—	7.13
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.30	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	56.8	56.8	< 0.005	< 0.005	0.22	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.83	2.83	< 0.005	< 0.005	0.01	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.47	0.47	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.18. IWM (2025) - 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	0.08	0.08	1.13	5.50	0.01	0.01	—	0.01	0.01	—	0.01	—	783	783	0.03	0.01	—	786
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.06	0.30	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	42.9	42.9	< 0.005	< 0.005	—	43.1
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.10	7.10	< 0.005	< 0.005	—	7.13
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.30	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	56.8	56.8	< 0.005	< 0.005	0.22	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.83	2.83	< 0.005	< 0.005	0.01	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.47	0.47	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.19. Rip Rap (2025) - 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 Equipmen	0.19	0.16	1.15	3.05	< 0.005	0.06	—	0.06	0.05	—	0.05	—	524	524	0.02	< 0.005	—	526
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	0.01	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.31	4.31	< 0.005	< 0.005	—	4.32
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.71	0.71	< 0.005	< 0.005	—	0.72
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.4	28.4	< 0.005	< 0.005	0.11	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.20. Rip Rap (2025) - 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 Equipmen	0.05	0.05	0.26	3.67	< 0.005	0.01	—	0.01	0.01	—	0.01	—	524	524	0.02	< 0.005	—	526
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.31	4.31	< 0.005	< 0.005	—	4.32
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.71	0.71	< 0.005	< 0.005	—	0.72
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.4	28.4	< 0.005	< 0.005	0.11	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.21. Jute Netting (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	—
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	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—

3.22. Jute Netting (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.23. Seeding and Planting (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.34	0.34	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	—
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	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—

3.24. Seeding and Planting (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.34	0.34	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.25. Aggregate Base (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
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	—
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	—
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	—
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	—
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	—
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	—
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	—
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	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—

3.26. Aggregate Base (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—
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	—
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	—
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	—
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	—
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	—
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	—
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	—
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	—

3.27. Plant Protection (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.28. Plant Protection (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.29. Planting Benches (2025) - 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 Equipmen	0.79	0.66	5.44	6.93	0.01	0.33	—	0.33	0.31	—	0.31	—	1,093	1,093	0.04	0.01	—	1,097
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.08	0.07	0.57	0.72	< 0.005	0.03	—	0.03	0.03	—	0.03	—	114	114	< 0.005	< 0.005	—	114
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.01	0.01	0.10	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	18.8	18.8	< 0.005	< 0.005	—	18.9
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.30	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	56.8	56.8	< 0.005	< 0.005	0.22	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.38	5.38	< 0.005	< 0.005	0.01	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.89	0.89	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.30. Planting Benches (2025) - 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 Equipmen	0.10	0.10	0.54	7.66	0.01	0.02	—	0.02	0.02	—	0.02	—	1,093	1,093	0.04	0.01	—	1,097
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.01	0.01	0.06	0.80	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	114	114	< 0.005	< 0.005	—	114
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	0.01	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.9

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.30	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	56.8	56.8	< 0.005	< 0.005	0.22	—
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	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.38	5.38	< 0.005	< 0.005	0.01	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.89	0.89	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.31. Excavation (2024) - 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 Equipmen	0.24	0.20	1.54	3.56	0.01	0.08	—	0.08	0.07	—	0.07	—	609	609	0.02	< 0.005	—	611

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	0.12	0.12	—	0.02	0.02	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.06	0.05	0.42	0.97	< 0.005	0.02	—	0.02	0.02	—	0.02	—	167	167	0.01	< 0.005	—	167
Dust From Material Movemen	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.01	0.01	0.08	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.6	27.6	< 0.005	< 0.005	—	27.7
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.0	29.0	< 0.005	< 0.005	0.12	—
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	—
Hauling	1.74	0.43	25.7	9.56	0.16	0.24	3.45	3.69	0.24	0.92	1.17	—	13,755	13,755	1.30	2.22	28.6	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.22	7.22	< 0.005	< 0.005	0.01	—
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	—
Hauling	0.48	0.12	7.44	2.63	0.05	0.07	0.93	1.00	0.07	0.25	0.32	—	3,768	3,768	0.36	0.61	3.39	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.20	1.20	< 0.005	< 0.005	< 0.005	—
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	—
Hauling	0.09	0.02	1.36	0.48	0.01	0.01	0.17	0.18	0.01	0.05	0.06	—	624	624	0.06	0.10	0.56	—

3.32. Excavation (2024) - 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 Equipmen	0.06	0.06	0.30	4.27	0.01	0.01	—	0.01	0.01	—	0.01	—	609	609	0.02	< 0.005	—	611
Dust From Material Movemen	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
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	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipmen	0.02	0.02	0.08	1.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	167	167	0.01	< 0.005	—	167
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	0.01	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.6	27.6	< 0.005	< 0.005	—	27.7
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.0	29.0	< 0.005	< 0.005	0.12	—
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	—
Hauling	1.74	0.43	25.7	9.56	0.16	0.24	3.45	3.69	0.24	0.92	1.17	—	13,755	13,755	1.30	2.22	28.6	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.22	7.22	< 0.005	< 0.005	0.01	—
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	—
Hauling	0.48	0.12	7.44	2.63	0.05	0.07	0.93	1.00	0.07	0.25	0.32	—	3,768	3,768	0.36	0.61	3.39	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.20	1.20	< 0.005	< 0.005	< 0.005	—
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	—
Hauling	0.09	0.02	1.36	0.48	0.01	0.01	0.17	0.18	0.01	0.05	0.06	—	624	624	0.06	0.10	0.56	—

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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
Demolition	Demolition	7/30/2024	8/2/2024	6.00	4.00	—
Mobilization - Year 1	Site Preparation	7/1/2024	7/9/2024	6.00	8.00	—
Clearing and Grubbing	Site Preparation	7/10/2024	7/24/2024	6.00	13.0	—
Hazardous Materials/Debris Handling	Site Preparation	6/24/2024	10/10/2024	6.00	94.0	—
Import Fill - Year 1	Site Preparation	4/8/2024	10/26/2024	6.00	174	—
Import Fill - Year 2	Site Preparation	4/8/2025	10/27/2025	6.00	174	—
Mobilization Year 2	Site Preparation	7/1/2025	7/9/2025	6.00	8.00	—
Demobilization	Site Preparation	11/1/2025	11/8/2025	6.00	7.00	—
IWM	Grading	8/9/2025	9/1/2025	6.00	20.0	—
Rip Rap	Grading	9/2/2025	9/4/2025	6.00	3.00	—
Jute Netting	Grading	9/5/2025	9/5/2025	6.00	1.00	—
Seeding and Planting	Grading	9/6/2025	9/10/2025	6.00	4.00	—
Aggregate Base	Grading	9/11/2025	9/16/2025	6.00	5.00	—
Plant Protection	Building Construction	9/10/2025	9/10/2025	6.00	1.00	—
Planting Benches	Trenching	7/1/2025	8/13/2025	6.00	38.0	—
Excavation	Trenching	6/1/2024	9/25/2024	6.00	100	—

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
Demolition	Excavators	Diesel	Average	1.00	8.00	172	0.38
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Clearing and Grubbing	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Hazardous Materials/Debris Handling	Excavators	Diesel	Average	1.00	8.00	172	0.38
Import Fill - Year 1	Rubber Tired Dozers	Diesel	Average	2.00	8.00	130	0.40
Import Fill - Year 1	Other Construction Equipment	Diesel	Average	1.00	8.00	100	0.42
Import Fill - Year 1	Other Construction Equipment	Diesel	Average	1.00	8.00	100	0.42
Import Fill - Year 2	Rubber Tired Dozers	Diesel	Average	2.00	8.00	130	0.40
Import Fill - Year 2	Other Construction Equipment	Diesel	Average	1.00	8.00	100	0.42
Import Fill - Year 2	Other Construction Equipment	Diesel	Average	1.00	8.00	100	0.42
IWM	Excavators	Diesel	Average	1.00	8.00	172	0.38
IWM	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	46.0	0.37
Rip Rap	Excavators	Diesel	Average	1.00	8.00	148	0.38
Planting Benches	Excavators	Diesel	Average	1.00	8.00	172	0.38
Planting Benches	Rubber Tired Dozers	Diesel	Average	1.00	8.00	130	0.40
Excavation	Excavators	Diesel	Average	1.00	8.00	172	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Excavators	Diesel	Tier 4 Final	1.00	8.00	172	0.38
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Clearing and Grubbing	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Clearing and Grubbing	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Hazardous Materials/Debris Handling	Excavators	Diesel	Tier 4 Final	1.00	8.00	172	0.38
Import Fill - Year 1	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	130	0.40
Import Fill - Year 1	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	100	0.42
Import Fill - Year 1	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	100	0.42
Import Fill - Year 2	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	130	0.40
Import Fill - Year 2	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	100	0.42
Import Fill - Year 2	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	100	0.42
IWM	Excavators	Diesel	Tier 4 Final	1.00	8.00	172	0.38
IWM	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	46.0	0.37
Rip Rap	Excavators	Diesel	Tier 4 Final	1.00	8.00	148	0.38
Planting Benches	Excavators	Diesel	Tier 4 Final	1.00	8.00	172	0.38
Planting Benches	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	130	0.40
Excavation	Excavators	Diesel	Tier 4 Final	1.00	8.00	172	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Mobilization - Year 1	—	—	—	—
Mobilization - Year 1	Worker	5.00	14.3	LDA,LDT1,LDT2
Mobilization - Year 1	Vendor	—	8.80	HHDT,MHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Mobilization - Year 1	Hauling	0.00	20.0	HHDT
Mobilization - Year 1	Onsite truck	—	—	HHDT
Clearing and Grubbing	—	—	—	—
Clearing and Grubbing	Worker	5.00	14.3	LDA,LDT1,LDT2
Clearing and Grubbing	Vendor	—	8.80	HHDT,MHDT
Clearing and Grubbing	Hauling	0.00	20.0	HHDT
Clearing and Grubbing	Onsite truck	—	—	HHDT
Demolition	—	—	—	—
Demolition	Worker	5.00	14.3	LDA,LDT1,LDT2
Demolition	Vendor	—	8.80	HHDT,MHDT
Demolition	Hauling	188	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Hazardous Materials/Debris Handling	—	—	—	—
Hazardous Materials/Debris Handling	Worker	2.50	14.3	LDA,LDT1,LDT2
Hazardous Materials/Debris Handling	Vendor	—	8.80	HHDT,MHDT
Hazardous Materials/Debris Handling	Hauling	0.00	20.0	HHDT
Hazardous Materials/Debris Handling	Onsite truck	—	—	HHDT
Import Fill - Year 1	—	—	—	—
Import Fill - Year 1	Worker	10.0	14.3	LDA,LDT1,LDT2
Import Fill - Year 1	Vendor	—	8.80	HHDT,MHDT
Import Fill - Year 1	Hauling	308	20.0	HHDT
Import Fill - Year 1	Onsite truck	—	—	HHDT
Import Fill - Year 2	—	—	—	—
Import Fill - Year 2	Worker	10.0	14.3	LDA,LDT1,LDT2
Import Fill - Year 2	Vendor	—	8.80	HHDT,MHDT
Import Fill - Year 2	Hauling	308	20.0	HHDT
Import Fill - Year 2	Onsite truck	—	—	HHDT
IWM	—	—	—	—
IWM	Worker	5.00	14.3	LDA,LDT1,LDT2

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
IWM	Vendor	—	8.80	HHDT,MHDT
IWM	Hauling	0.00	20.0	HHDT
IWM	Onsite truck	—	—	HHDT
Rip Rap	—	—	—	—
Rip Rap	Worker	2.50	14.3	LDA,LDT1,LDT2
Rip Rap	Vendor	—	8.80	HHDT,MHDT
Rip Rap	Hauling	0.00	20.0	HHDT
Rip Rap	Onsite truck	—	—	HHDT
Jute Netting	—	—	—	—
Jute Netting	Worker	3.00	14.3	LDA,LDT1,LDT2
Jute Netting	Vendor	—	8.80	HHDT,MHDT
Jute Netting	Hauling	0.00	20.0	HHDT
Jute Netting	Onsite truck	—	—	HHDT
Seeding and Planting	—	—	—	—
Seeding and Planting	Worker	3.00	14.3	LDA,LDT1,LDT2
Seeding and Planting	Vendor	—	8.80	HHDT,MHDT
Seeding and Planting	Hauling	0.00	20.0	HHDT
Seeding and Planting	Onsite truck	—	—	HHDT
Aggregate Base	—	—	—	—
Aggregate Base	Worker	0.00	14.3	LDA,LDT1,LDT2
Aggregate Base	Vendor	—	8.80	HHDT,MHDT
Aggregate Base	Hauling	0.00	20.0	HHDT
Aggregate Base	Onsite truck	—	—	HHDT
Plant Protection	—	—	—	—
Plant Protection	Worker	3.00	14.3	LDA,LDT1,LDT2
Plant Protection	Vendor	0.00	8.80	HHDT,MHDT
Plant Protection	Hauling	0.00	20.0	HHDT
Plant Protection	Onsite truck	—	—	HHDT
Planting Benches	—	—	—	—
Planting Benches	Worker	5.00	14.3	LDA,LDT1,LDT2
Planting Benches	Vendor	—	8.80	HHDT,MHDT
Planting Benches	Hauling	0.00	20.0	HHDT
Planting Benches	Onsite truck	—	—	HHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Mobilization Year 2	—	—	—	—
Mobilization Year 2	Worker	5.00	14.3	LDA,LDT1,LDT2
Mobilization Year 2	Vendor	—	8.80	HHDT,MHDT
Mobilization Year 2	Hauling	0.00	20.0	HHDT
Mobilization Year 2	Onsite truck	—	—	HHDT
Demobilization	—	—	—	—
Demobilization	Worker	5.00	14.3	LDA,LDT1,LDT2
Demobilization	Vendor	—	8.80	HHDT,MHDT
Demobilization	Hauling	0.00	20.0	HHDT
Demobilization	Onsite truck	—	—	HHDT
Excavation	—	—	—	—
Excavation	Worker	2.50	14.3	LDA,LDT1,LDT2
Excavation	Vendor	—	8.80	HHDT,MHDT
Excavation	Hauling	182	20.0	HHDT
Excavation	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Mobilization - Year 1	—	—	—	—
Mobilization - Year 1	Worker	5.00	14.3	LDA,LDT1,LDT2
Mobilization - Year 1	Vendor	—	8.80	HHDT,MHDT
Mobilization - Year 1	Hauling	0.00	20.0	HHDT
Mobilization - Year 1	Onsite truck	—	—	HHDT
Clearing and Grubbing	—	—	—	—
Clearing and Grubbing	Worker	5.00	14.3	LDA,LDT1,LDT2
Clearing and Grubbing	Vendor	—	8.80	HHDT,MHDT
Clearing and Grubbing	Hauling	0.00	20.0	HHDT
Clearing and Grubbing	Onsite truck	—	—	HHDT
Demolition	—	—	—	—
Demolition	Worker	5.00	14.3	LDA,LDT1,LDT2
Demolition	Vendor	—	8.80	HHDT,MHDT
Demolition	Hauling	188	20.0	HHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	Onsite truck	—	—	HHDT
Hazardous Materials/Debris Handling	—	—	—	—
Hazardous Materials/Debris Handling	Worker	2.50	14.3	LDA,LDT1,LDT2
Hazardous Materials/Debris Handling	Vendor	—	8.80	HHDT,MHDT
Hazardous Materials/Debris Handling	Hauling	0.00	20.0	HHDT
Hazardous Materials/Debris Handling	Onsite truck	—	—	HHDT
Import Fill - Year 1	—	—	—	—
Import Fill - Year 1	Worker	10.0	14.3	LDA,LDT1,LDT2
Import Fill - Year 1	Vendor	—	8.80	HHDT,MHDT
Import Fill - Year 1	Hauling	308	20.0	HHDT
Import Fill - Year 1	Onsite truck	—	—	HHDT
Import Fill - Year 2	—	—	—	—
Import Fill - Year 2	Worker	10.0	14.3	LDA,LDT1,LDT2
Import Fill - Year 2	Vendor	—	8.80	HHDT,MHDT
Import Fill - Year 2	Hauling	308	20.0	HHDT
Import Fill - Year 2	Onsite truck	—	—	HHDT
IWM	—	—	—	—
IWM	Worker	5.00	14.3	LDA,LDT1,LDT2
IWM	Vendor	—	8.80	HHDT,MHDT
IWM	Hauling	0.00	20.0	HHDT
IWM	Onsite truck	—	—	HHDT
Rip Rap	—	—	—	—
Rip Rap	Worker	2.50	14.3	LDA,LDT1,LDT2
Rip Rap	Vendor	—	8.80	HHDT,MHDT
Rip Rap	Hauling	0.00	20.0	HHDT
Rip Rap	Onsite truck	—	—	HHDT
Jute Netting	—	—	—	—
Jute Netting	Worker	3.00	14.3	LDA,LDT1,LDT2
Jute Netting	Vendor	—	8.80	HHDT,MHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Jute Netting	Hauling	0.00	20.0	HHDT
Jute Netting	Onsite truck	—	—	HHDT
Seeding and Planting	—	—	—	—
Seeding and Planting	Worker	3.00	14.3	LDA,LDT1,LDT2
Seeding and Planting	Vendor	—	8.80	HHDT,MHDT
Seeding and Planting	Hauling	0.00	20.0	HHDT
Seeding and Planting	Onsite truck	—	—	HHDT
Aggregate Base	—	—	—	—
Aggregate Base	Worker	0.00	14.3	LDA,LDT1,LDT2
Aggregate Base	Vendor	—	8.80	HHDT,MHDT
Aggregate Base	Hauling	0.00	20.0	HHDT
Aggregate Base	Onsite truck	—	—	HHDT
Plant Protection	—	—	—	—
Plant Protection	Worker	3.00	14.3	LDA,LDT1,LDT2
Plant Protection	Vendor	0.00	8.80	HHDT,MHDT
Plant Protection	Hauling	0.00	20.0	HHDT
Plant Protection	Onsite truck	—	—	HHDT
Planting Benches	—	—	—	—
Planting Benches	Worker	5.00	14.3	LDA,LDT1,LDT2
Planting Benches	Vendor	—	8.80	HHDT,MHDT
Planting Benches	Hauling	0.00	20.0	HHDT
Planting Benches	Onsite truck	—	—	HHDT
Mobilization Year 2	—	—	—	—
Mobilization Year 2	Worker	5.00	14.3	LDA,LDT1,LDT2
Mobilization Year 2	Vendor	—	8.80	HHDT,MHDT
Mobilization Year 2	Hauling	0.00	20.0	HHDT
Mobilization Year 2	Onsite truck	—	—	HHDT
Demobilization	—	—	—	—
Demobilization	Worker	5.00	14.3	LDA,LDT1,LDT2
Demobilization	Vendor	—	8.80	HHDT,MHDT
Demobilization	Hauling	0.00	20.0	HHDT
Demobilization	Onsite truck	—	—	HHDT
Excavation	—	—	—	—

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Excavation	Worker	2.50	14.3	LDA,LDT1,LDT2
Excavation	Vendor	—	8.80	HHDT,MHDT
Excavation	Hauling	182	20.0	HHDT
Excavation	Onsite truck	—	—	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 (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	3,000	—
Mobilization - Year 1	0.00	0.00	0.00	0.00	—
Clearing and Grubbing	0.00	0.00	261	0.00	—
Hazardous Materials/Debris Handling	0.00	0.00	261	0.00	—
Import Fill - Year 1	428,180	0.00	261	0.00	—
Import Fill - Year 2	428,180	0.00	261	0.00	—
Mobilization Year 2	0.00	0.00	0.00	0.00	—
Demobilization	0.00	0.00	0.00	0.00	—
IWM	0.00	0.00	0.00	0.00	—
Rip Rap	0.00	0.00	261	0.00	—
Jute Netting	0.00	0.00	261	0.00	—

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Seeding and Planting	0.00	0.00	261	0.00	—
Aggregate Base	0.00	0.00	261	0.00	—
Excavation	0.00	145,393	261	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
User Defined Recreational	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	375	0.01	< 0.005
2025	0.00	375	0.01	< 0.005

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	20.2	annual days of extreme heat
Extreme Precipitation	6.00	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	1	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	1	1	1	2
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	50.5
AQ-PM	34.9
AQ-DPM	32.1
Drinking Water	16.8
Lead Risk Housing	76.6
Pesticides	64.6
Toxic Releases	29.4
Traffic	78.3
Effect Indicators	—
CleanUp Sites	29.4
Groundwater	42.8
Haz Waste Facilities/Generators	95.0
Impaired Water Bodies	90.1
Solid Waste	54.8
Sensitive Population	—
Asthma	86.8
Cardio-vascular	82.8
Low Birth Weights	64.2
Socioeconomic Factor Indicators	—
Education	62.9
Housing	53.1
Linguistic	50.0
Poverty	67.9
Unemployment	22.6

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	25.00962402
Employed	22.03259335
Median HI	41.76825356
Education	—
Bachelor's or higher	22.50737842
High school enrollment	100
Preschool enrollment	33.99204414
Transportation	—
Auto Access	42.10188631
Active commuting	47.95329142
Social	—
2-parent households	21.80161684
Voting	42.62799949
Neighborhood	—
Alcohol availability	47.68381881
Park access	81.35506224
Retail density	42.30719877
Supermarket access	60.61850379
Tree canopy	87.82240472
Housing	—
Homeownership	50.86616194
Housing habitability	61.91453869
Low-inc homeowner severe housing cost burden	81.6501989
Low-inc renter severe housing cost burden	38.1239574
Uncrowded housing	40.20274605
Health Outcomes	—
Insured adults	36.77659438
Arthritis	24.0
Asthma ER Admissions	17.5

Indicator	Result for Project Census Tract
High Blood Pressure	22.4
Cancer (excluding skin)	45.0
Asthma	23.6
Coronary Heart Disease	21.3
Chronic Obstructive Pulmonary Disease	22.0
Diagnosed Diabetes	23.2
Life Expectancy at Birth	29.0
Cognitively Disabled	72.6
Physically Disabled	45.1
Heart Attack ER Admissions	34.7
Mental Health Not Good	29.3
Chronic Kidney Disease	20.1
Obesity	20.7
Pedestrian Injuries	82.1
Physical Health Not Good	27.6
Stroke	22.5
Health Risk Behaviors	—
Binge Drinking	57.0
Current Smoker	21.4
No Leisure Time for Physical Activity	32.7
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	43.1
Elderly	48.7
English Speaking	30.6
Foreign-born	59.5
Outdoor Workers	26.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	58.5
Traffic Density	77.5
Traffic Access	23.0
Other Indices	—

Indicator	Result for Project Census Tract
Hardship	71.7
Other Decision Support	—
2016 Voting	30.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	80.0
Healthy Places Index Score for Project Location (b)	34.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
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	Acreage provided by USACE.
Construction: Construction Phases	Phasing provided by USACE.
Construction: Off-Road Equipment	Equipment list provided by USACE.
Construction: Dust From Material Movement	Material import/export provided by USACE.
Construction: Trips and VMT	Information provided by USACE. Where information was not provided, defaults were used.

Sacramento River Mitigation Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Sacramento River Mitigation
Construction Start Date	7/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	5.70
Precipitation (days)	20.6
Location	38.18004145637849, -121.6571709137232
County	Sacramento
City	Unincorporated
Air District	Sacramento Metropolitan AQMD
Air Basin	Sacramento Valley
TAZ	715
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.13

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
User Defined Recreational	1.00	User Defined Unit	200	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	5.11	2.50	60.4	29.7	0.32	1.05	13.2	14.2	1.00	5.09	6.09	—	27,792	27,792	2.45	4.00	51.6	29,096
Mit.	3.43	1.09	47.6	32.6	0.32	0.50	8.94	9.44	0.50	3.00	3.50	—	27,792	27,792	2.45	4.00	51.6	29,096
% Reduced	33%	56%	21%	-10%	—	53%	32%	34%	50%	41%	43%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.55	0.46	2.69	3.23	0.01	0.09	0.08	0.17	0.09	0.02	0.11	—	1,374	1,374	0.05	0.02	0.01	1,379
Mit.	0.16	0.15	0.67	6.72	0.01	0.02	0.08	0.11	0.02	0.02	0.04	—	1,374	1,374	0.05	0.02	0.01	1,379
% Reduced	72%	67%	75%	-108%	—	74%	—	40%	72%	—	59%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Unmit.	0.19	0.13	1.66	1.18	0.01	0.04	0.12	0.16	0.04	0.03	0.07	—	689	689	0.05	0.06	0.37	709
Mit.	0.08	0.04	0.87	1.77	0.01	0.01	0.11	0.12	0.01	0.03	0.04	—	689	689	0.05	0.06	0.37	709
% Reduced	58%	67%	47%	-50%	—	72%	3%	22%	70%	—	41%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.03	0.02	0.30	0.22	< 0.005	0.01	0.02	0.03	0.01	0.01	0.01	—	114	114	0.01	0.01	0.06	117
Mit.	0.01	0.01	0.16	0.32	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	114	114	0.01	0.01	0.06	117
% Reduced	58%	67%	47%	-50%	—	72%	3%	22%	70%	2%	41%	—	—	—	—	—	—	—

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	5.11	2.50	60.4	29.7	0.32	1.05	13.2	14.2	1.00	5.09	6.09	—	27,792	27,792	2.45	4.00	51.6	29,096
2025	2.25	1.35	25.1	13.9	0.07	0.56	2.45	3.01	0.53	0.64	1.16	—	10,289	10,289	0.91	1.42	18.8	10,753
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
2025	0.55	0.46	2.69	3.23	0.01	0.09	0.08	0.17	0.09	0.02	0.11	—	1,374	1,374	0.05	0.02	0.01	1,379
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.07	0.03	0.79	0.39	< 0.005	0.01	0.10	0.11	0.01	0.03	0.04	—	338	338	0.03	0.05	0.26	353
2025	0.19	0.13	1.66	1.18	0.01	0.04	0.12	0.16	0.04	0.03	0.07	—	689	689	0.05	0.06	0.37	709
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.01	0.01	0.14	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	55.9	55.9	< 0.005	0.01	0.04	58.4
2025	0.03	0.02	0.30	0.22	< 0.005	0.01	0.02	0.03	0.01	0.01	0.01	—	114	114	0.01	0.01	0.06	117

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	3.43	1.09	47.6	32.6	0.32	0.50	8.94	9.44	0.50	3.00	3.50	—	27,792	27,792	2.45	4.00	51.6	29,096
2025	1.24	0.42	16.7	19.5	0.07	0.19	2.36	2.55	0.19	0.62	0.81	—	10,289	10,289	0.91	1.42	18.8	10,753
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
2025	0.16	0.15	0.67	6.72	0.01	0.02	0.08	0.11	0.02	0.02	0.04	—	1,374	1,374	0.05	0.02	0.01	1,379
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.04	0.01	0.60	0.43	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	338	338	0.03	0.05	0.26	353
2025	0.08	0.04	0.87	1.77	0.01	0.01	0.11	0.12	0.01	0.03	0.04	—	689	689	0.05	0.06	0.37	709
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.01	< 0.005	0.11	0.08	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	55.9	55.9	< 0.005	0.01	0.04	58.4
2025	0.01	0.01	0.16	0.32	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	114	114	0.01	0.01	0.06	117

3. Construction Emissions Details

3.1. Site Preparation (2024) - 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 Equipmen	1.48	1.24	12.2	9.87	0.01	0.54	—	0.54	0.50	—	0.50	—	1,614	1,614	0.07	0.01	—	1,620

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	0.01	0.01	0.07	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.85	8.85	< 0.005	< 0.005	—	8.88
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.46	1.46	< 0.005	< 0.005	—	1.47
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	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.0	29.0	< 0.005	< 0.005	0.12	29.4
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.15
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
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. Site Preparation (2024) - 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 Equipmen	0.15	0.15	0.79	7.89	0.01	0.03	—	0.03	0.03	—	0.03	—	1,614	1,614	0.07	0.01	—	1,620
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 Equipmen	< 0.005	< 0.005	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.85	8.85	< 0.005	< 0.005	—	8.88
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.46	1.46	< 0.005	< 0.005	—	1.47
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	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.0	29.0	< 0.005	< 0.005	0.12	29.4
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.15
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
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

3.3. Site Preparation (2024) - 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 Equipmen	0.71	0.60	4.02	3.88	0.02	0.14	—	0.14	0.13	—	0.13	—	1,715	1,715	0.07	0.01	—	1,721
Dust From Material Movemen	—	—	—	—	—	—	0.33	0.33	—	0.05	0.05	—	—	—	—	—	—	—
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 Equipmen	0.01	0.01	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.5	23.5	< 0.005	< 0.005	—	23.6

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.89	3.89	< 0.005	< 0.005	—	3.90
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.0	29.0	< 0.005	< 0.005	0.12	29.4
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	2.59	0.64	38.3	14.2	0.24	0.36	5.14	5.50	0.36	1.37	1.74	—	20,479	20,479	1.93	3.30	42.7	21,553
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.36	0.36	< 0.005	< 0.005	< 0.005	0.37
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	0.04	0.01	0.55	0.20	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	280	280	0.03	0.05	0.25	295
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
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	0.01	< 0.005	0.10	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	46.4	46.4	< 0.005	0.01	0.04	48.8

3.4. Site Preparation (2024) - 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 Equipmen	0.16	0.16	0.85	8.45	0.02	0.03	—	0.03	0.03	—	0.03	—	1,715	1,715	0.07	0.01	—	1,721
Dust From Material Movemen	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.89	3.89	< 0.005	< 0.005	—	3.90
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.0	29.0	< 0.005	< 0.005	0.12	29.4
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	2.59	0.64	38.3	14.2	0.24	0.36	5.14	5.50	0.36	1.37	1.74	—	20,479	20,479	1.93	3.30	42.7	21,553
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.36	0.36	< 0.005	< 0.005	< 0.005	0.37
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	0.04	0.01	0.55	0.20	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	280	280	0.03	0.05	0.25	295
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
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	0.01	< 0.005	0.10	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	46.4	46.4	< 0.005	0.01	0.04	48.8

3.5. Site Preparation (2024) - 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 Equipmen	1.48	1.24	12.2	9.87	0.01	0.54	—	0.54	0.50	—	0.50	—	1,614	1,614	0.07	0.01	—	1,620
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.01	0.01	0.07	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.85	8.85	< 0.005	< 0.005	—	8.88
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.46	1.46	< 0.005	< 0.005	—	1.47
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	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.0	29.0	< 0.005	< 0.005	0.12	29.4
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.15
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
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

3.6. Site Preparation (2024) - 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 Equipmen	0.15	0.15	0.79	7.89	0.01	0.03	—	0.03	0.03	—	0.03	—	1,614	1,614	0.07	0.01	—	1,620
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 Equipmen	< 0.005	< 0.005	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.85	8.85	< 0.005	< 0.005	—	8.88
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.46	1.46	< 0.005	< 0.005	—	1.47
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	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.0	29.0	< 0.005	< 0.005	0.12	29.4
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.15
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
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

3.7. Site Preparation (2025) - 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 Equipmen	0.48	0.40	2.78	3.27	0.01	0.11	—	0.11	0.10	—	0.10	—	1,476	1,476	0.06	0.01	—	1,481
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.04	4.04	< 0.005	< 0.005	—	4.06

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.67	0.67	< 0.005	< 0.005	—	0.67
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.01	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.4	28.4	< 0.005	< 0.005	0.11	28.8
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
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

3.8. Site Preparation (2025) - 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 Equipmen	0.14	0.14	0.73	7.30	0.01	0.03	—	0.03	0.03	—	0.03	—	1,476	1,476	0.06	0.01	—	1,481
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.04	4.04	< 0.005	< 0.005	—	4.06
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.67	0.67	< 0.005	< 0.005	—	0.67
Dust From Material Movemen	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.4	28.4	< 0.005	< 0.005	0.11	28.8
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
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

3.9. Site Preparation (2024) - 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 Equipmen	1.26	1.06	10.4	8.42	0.01	0.46	—	0.46	0.43	—	0.43	—	1,378	1,378	0.06	0.01	—	1,383
Dust From Material Movemen	—	—	—	—	—	—	6.62	6.62	—	3.38	3.38	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.78	3.78	< 0.005	< 0.005	—	3.79
Dust From Material Movemen	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.63	0.63	< 0.005	< 0.005	—	0.63
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.0	29.0	< 0.005	< 0.005	0.12	29.4
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	0.53	0.13	7.77	2.89	0.05	0.07	1.04	1.12	0.07	0.28	0.35	—	4,162	4,162	0.39	0.67	8.67	4,381
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.4	11.4	< 0.005	< 0.005	0.01	12.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.89	1.89	< 0.005	< 0.005	< 0.005	1.98

3.10. Site Preparation (2024) - 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 Equipmen	0.13	0.13	0.67	6.73	0.01	0.03	—	0.03	0.03	—	0.03	—	1,378	1,378	0.06	0.01	—	1,383
Dust From Material Movemen	—	—	—	—	—	—	2.58	2.58	—	1.32	1.32	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.78	3.78	< 0.005	< 0.005	—	3.79
Dust From Material Movemen	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.63	0.63	< 0.005	< 0.005	—	0.63
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.0	29.0	< 0.005	< 0.005	0.12	29.4
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	0.53	0.13	7.77	2.89	0.05	0.07	1.04	1.12	0.07	0.28	0.35	—	4,162	4,162	0.39	0.67	8.67	4,381
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.4	11.4	< 0.005	< 0.005	0.01	12.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.89	1.89	< 0.005	< 0.005	< 0.005	1.98

3.11. Site Preparation (2025) - 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 Equipmen	1.14	0.96	9.08	7.51	0.01	0.40	—	0.40	0.37	—	0.37	—	1,378	1,378	0.06	0.01	—	1,383
Dust From Material Movemen	—	—	—	—	—	—	0.15	0.15	—	0.02	0.02	—	—	—	—	—	—	—
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 Equipmen	0.03	0.02	0.20	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.2	30.2	< 0.005	< 0.005	—	30.3
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.00	5.00	< 0.005	< 0.005	—	5.02
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.4	28.4	< 0.005	< 0.005	0.11	28.8
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	1.09	0.23	16.0	6.21	0.06	0.16	2.28	2.44	0.16	0.61	0.77	—	8,882	8,882	0.85	1.41	18.7	9,341
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.57	0.57	< 0.005	< 0.005	< 0.005	0.57
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	0.02	0.01	0.37	0.14	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	195	195	0.02	0.03	0.18	204
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.10
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	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.2	32.2	< 0.005	0.01	0.03	33.9

3.12. Site Preparation (2025) - 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 Equipmen	0.13	0.13	0.67	6.73	0.01	0.03	—	0.03	0.03	—	0.03	—	1,378	1,378	0.06	0.01	—	1,383
Dust From Material Movemen	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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 Equipmen	< 0.005	< 0.005	0.01	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.2	30.2	< 0.005	< 0.005	—	30.3
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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 Equipmen	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.00	5.00	< 0.005	< 0.005	—	5.02
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.01	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.4	28.4	< 0.005	< 0.005	0.11	28.8
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	1.09	0.23	16.0	6.21	0.06	0.16	2.28	2.44	0.16	0.61	0.77	—	8,882	8,882	0.85	1.41	18.7	9,341
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.57	0.57	< 0.005	< 0.005	< 0.005	0.57
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	0.02	0.01	0.37	0.14	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	195	195	0.02	0.03	0.18	204
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.10
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	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.2	32.2	< 0.005	0.01	0.03	33.9

3.13. Building Construction (2025) - 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 Equipmen	0.45	0.38	3.66	3.12	0.01	0.15	—	0.15	0.14	—	0.14	—	990	990	0.04	0.01	—	994
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 Equipmen	0.05	0.04	0.40	0.34	< 0.005	0.02	—	0.02	0.01	—	0.01	—	109	109	< 0.005	< 0.005	—	109
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 Equipmen	0.01	0.01	0.07	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.0	18.0	< 0.005	< 0.005	—	18.0
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	34.6
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.40	3.40	< 0.005	< 0.005	0.01	3.45
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.56	0.56	< 0.005	< 0.005	< 0.005	0.57
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

3.14. Building Construction (2025) - 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 Equipmen	0.09	0.09	0.49	4.88	0.01	0.02	—	0.02	0.02	—	0.02	—	990	990	0.04	0.01	—	994
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.01	0.01	0.05	0.53	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	109	109	< 0.005	< 0.005	—	109
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 Equipmen	< 0.005	< 0.005	0.01	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.0	18.0	< 0.005	< 0.005	—	18.0
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	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	34.6
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.40	3.40	< 0.005	< 0.005	0.01	3.45
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.56	0.56	< 0.005	< 0.005	< 0.005	0.57
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

3.15. Building Construction (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.14	0.14	—	0.02	0.02	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	34.6
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Hauling	1.04	0.22	15.2	5.90	0.05	0.15	2.16	2.31	0.15	0.58	0.73	—	8,429	8,429	0.81	1.33	17.7	8,864
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.68	0.68	< 0.005	< 0.005	< 0.005	0.69
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	0.02	< 0.005	0.35	0.13	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	185	185	0.02	0.03	0.17	194
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.11	0.11	< 0.005	< 0.005	< 0.005	0.11
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	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.6	30.6	< 0.005	< 0.005	0.03	32.1

3.16. Building Construction (2025) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movemen	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	34.6
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	1.04	0.22	15.2	5.90	0.05	0.15	2.16	2.31	0.15	0.58	0.73	—	8,429	8,429	0.81	1.33	17.7	8,864
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.68	0.68	< 0.005	< 0.005	< 0.005	0.69
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	0.02	< 0.005	0.35	0.13	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	185	185	0.02	0.03	0.17	194
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.11	0.11	< 0.005	< 0.005	< 0.005	0.11
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	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.6	30.6	< 0.005	< 0.005	0.03	32.1

3.17. Building Construction (2025) - 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 Equipmen	0.52	0.43	2.66	2.87	0.01	0.09	—	0.09	0.09	—	0.09	—	1,293	1,293	0.05	0.01	—	1,297
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.52	0.43	2.66	2.87	0.01	0.09	—	0.09	0.09	—	0.09	—	1,293	1,293	0.05	0.01	—	1,297
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.05	0.04	0.25	0.28	< 0.005	0.01	—	0.01	0.01	—	0.01	—	124	124	0.01	< 0.005	—	124
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 Equipmen	0.01	0.01	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.5	20.5	< 0.005	< 0.005	—	20.6
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	0.04	0.03	0.02	0.48	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	90.8	90.8	< 0.005	< 0.005	0.35	92.2
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.36	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.6	80.6	< 0.005	< 0.005	0.01	81.6
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.93	7.93	< 0.005	< 0.005	0.01	8.04
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.31	1.31	< 0.005	< 0.005	< 0.005	1.33
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

3.18. Building Construction (2025) - 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 Equipmen	0.12	0.12	0.64	6.36	0.01	0.02	—	0.02	0.02	—	0.02	—	1,293	1,293	0.05	0.01	—	1,297
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.12	0.12	0.64	6.36	0.01	0.02	—	0.02	0.02	—	0.02	—	1,293	1,293	0.05	0.01	—	1,297
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	0.01	0.01	0.06	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	124	124	0.01	< 0.005	—	124
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 Equipmen	< 0.005	< 0.005	0.01	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.5	20.5	< 0.005	< 0.005	—	20.6
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	0.04	0.03	0.02	0.48	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	90.8	90.8	< 0.005	< 0.005	0.35	92.2
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.36	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.6	80.6	< 0.005	< 0.005	0.01	81.6
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.93	7.93	< 0.005	< 0.005	0.01	8.04
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.31	1.31	< 0.005	< 0.005	< 0.005	1.33
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

3.19. Building Construction (2025) - 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 Equipmen	0.39	0.33	2.04	2.19	0.01	0.08	—	0.08	0.07	—	0.07	—	935	935	0.04	0.01	—	938
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 Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.56	2.56	< 0.005	< 0.005	—	2.57
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.42	0.42	< 0.005	< 0.005	—	0.43
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	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	34.6
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
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

3.20. Building Construction (2025) - 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 Equipmen	0.09	0.09	0.46	4.62	0.01	0.02	—	0.02	0.02	—	0.02	—	935	935	0.04	0.01	—	938
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.56	2.56	< 0.005	< 0.005	—	2.57
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.42	0.42	< 0.005	< 0.005	—	0.43

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	34.6
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
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

3.21. Building Construction (2025) - 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 Equipmen	0.39	0.33	2.04	2.19	0.01	0.08	—	0.08	0.07	—	0.07	—	935	935	0.04	0.01	—	938
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.56	2.56	< 0.005	< 0.005	—	2.57
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.42	0.42	< 0.005	< 0.005	—	0.43
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	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	34.6
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
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

3.22. Building Construction (2025) - 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 Equipmen	0.09	0.09	0.46	4.62	0.01	0.02	—	0.02	0.02	—	0.02	—	935	935	0.04	0.01	—	938
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.56	2.56	< 0.005	< 0.005	—	2.57
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.42	0.42	< 0.005	< 0.005	—	0.43
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	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	34.6
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
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

3.23. Building Construction (2025) - 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 Equipmen	0.12	0.10	0.69	0.82	< 0.005	0.03	—	0.03	0.02	—	0.02	—	369	369	0.01	< 0.005	—	370
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.02	2.02	< 0.005	< 0.005	—	2.03
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.33	0.33	< 0.005	< 0.005	—	0.34

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.2	30.2	< 0.005	< 0.005	< 0.005	30.6
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	0.01	< 0.005	0.14	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	74.1	74.1	0.01	0.01	< 0.005	77.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.43
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07

3.24. Building Construction (2025) - 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 Equipmen	0.04	0.04	0.18	1.82	< 0.005	0.01	—	0.01	0.01	—	0.01	—	369	369	0.01	< 0.005	—	370

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.02	2.02	< 0.005	< 0.005	—	2.03
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.33	0.33	< 0.005	< 0.005	—	0.34
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.2	30.2	< 0.005	< 0.005	< 0.005	30.6
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	0.01	< 0.005	0.14	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	74.1	74.1	0.01	0.01	< 0.005	77.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.43
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07

3.25. Building Construction (2025) - 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 Equipmen	0.48	0.40	2.78	3.27	0.01	0.11	—	0.11	0.10	—	0.10	—	1,476	1,476	0.06	0.01	—	1,481
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 Equipmen	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.1	12.1	< 0.005	< 0.005	—	12.2
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 Equipmen	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.01	2.01	< 0.005	< 0.005	—	2.01
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	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	34.6
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	0.01	< 0.005	0.13	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	74.1	74.1	0.01	0.01	0.16	77.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.26
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.04
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.11

3.26. Building Construction (2025) - 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 Equipmen	0.14	0.14	0.73	7.30	0.01	0.03	—	0.03	0.03	—	0.03	—	1,476	1,476	0.06	0.01	—	1,481
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 Equipmen	< 0.005	< 0.005	0.01	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.1	12.1	< 0.005	< 0.005	—	12.2
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.01	2.01	< 0.005	< 0.005	—	2.01

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	34.6
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	0.01	< 0.005	0.13	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	74.1	74.1	0.01	0.01	0.16	77.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.26
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.04
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.11

3.27. Building Construction (2025) - 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 Equipmen	0.53	0.45	3.78	2.20	0.01	0.15	—	0.15	0.14	—	0.14	—	987	987	0.04	0.01	—	991
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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmen	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.11	8.11	< 0.005	< 0.005	—	8.14
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 Equipmen	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.34	1.34	< 0.005	< 0.005	—	1.35
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	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	34.6
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	0.01	< 0.005	0.13	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	74.1	74.1	0.01	0.01	0.16	77.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.26
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.04
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.11

3.28. Building Construction (2025) - 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 Equipmen	0.09	0.09	0.49	4.86	0.01	0.02	—	0.02	0.02	—	0.02	—	987	987	0.04	0.01	—	991
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 Equipmen	< 0.005	< 0.005	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.11	8.11	< 0.005	< 0.005	—	8.14
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 Equipmen	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.34	1.34	< 0.005	< 0.005	—	1.35
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	0.01	0.01	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.13	34.6
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	0.01	< 0.005	0.13	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	74.1	74.1	0.01	0.01	0.16	77.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.26
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.04
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.11

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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
Mobilization - Year 1	Site Preparation	7/1/2024	7/2/2024	6.00	2.00	—
Stump Removal	Site Preparation	7/3/2024	7/8/2024	6.00	5.00	—
Demobilization - Year 1.	Site Preparation	7/8/2024	7/9/2024	6.00	2.00	—
Mobilization - Year 2.	Site Preparation	7/1/2025	7/1/2025	6.00	1.00	—
Clearing and Grubbing	Site Preparation	7/3/2024	7/3/2024	6.00	1.00	—
Import Fill	Site Preparation	7/4/2025	7/12/2025	6.00	8.00	—
Wetland Channels	Building Construction	7/13/2025	8/28/2025	6.00	40.0	—
Relocate Channel Fill	Building Construction	8/29/2025	9/6/2025	6.00	8.00	—
Excavation to Disposal	Building Construction	9/8/2025	10/24/2025	5.00	35.0	—
Geotextile Fabric	Building Construction	9/20/2025	9/20/2025	6.00	1.00	—
Seeding and Mulching	Building Construction	9/23/2025	9/23/2025	6.00	1.00	—
Demobilization -Year 2	Building Construction	11/15/2025	11/17/2025	6.00	2.00	—
IWM	Building Construction	9/24/2025	9/26/2025	6.00	3.00	—
Live Willow Cutting	Building Construction	9/26/2025	9/29/2025	6.00	3.00	—

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
Mobilization - Year 1	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	430	0.40
Stump Removal	Off-Highway Trucks	Diesel	Average	1.00	8.00	485	0.38
Demobilization - Year 1.	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	430	0.40
Mobilization - Year 2.	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	430	0.37

Clearing and Grubbing	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Import Fill	Plate Compactors	Diesel	Average	1.00	8.00	367	0.40
Wetland Channels	Excavators	Diesel	Average	1.00	8.00	367	0.29
Excavation to Disposal	Off-Highway Trucks	Diesel	Average	1.00	8.00	365	0.38
Geotextile Fabric	Off-Highway Trucks	Diesel	Average	1.00	8.00	265	0.38
Seeding and Mulching	Off-Highway Trucks	Diesel	Average	1.00	8.00	265	0.38
Demobilization -Year 2	Tractors/Loaders/Backhoes	Diesel	Average	1.00	2.00	430	0.37
IWM	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	430	0.37
Live Willow Cutting	Other Material Handling Equipment	Diesel	Average	1.00	8.00	265	0.40

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Mobilization - Year 1	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	430	0.40
Stump Removal	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	485	0.38
Demobilization - Year 1.	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	430	0.40
Mobilization - Year 2.	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	430	0.37
Clearing and Grubbing	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Import Fill	Plate Compactors	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Wetland Channels	Excavators	Diesel	Tier 4 Final	1.00	8.00	367	0.29
Excavation to Disposal	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	365	0.38
Geotextile Fabric	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	265	0.38
Seeding and Mulching	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	265	0.38
Demobilization -Year 2	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	2.00	430	0.37
IWM	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	430	0.37
Live Willow Cutting	Other Material Handling Equipment	Diesel	Tier 4 Final	1.00	8.00	265	0.40

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Mobilization - Year 1	—	—	—	—
Mobilization - Year 1	Worker	2.50	14.3	LDA,LDT1,LDT2
Mobilization - Year 1	Vendor	—	8.80	HHDT,MHDT
Mobilization - Year 1	Hauling	0.00	20.0	HHDT
Mobilization - Year 1	Onsite truck	—	—	HHDT
Stump Removal	—	—	—	—
Stump Removal	Worker	2.50	14.3	LDA,LDT1,LDT2
Stump Removal	Vendor	—	8.80	HHDT,MHDT
Stump Removal	Hauling	271	20.0	HHDT
Stump Removal	Onsite truck	—	—	HHDT
Demobilization - Year 1.	—	—	—	—
Demobilization - Year 1.	Worker	2.50	14.3	LDA,LDT1,LDT2
Demobilization - Year 1.	Vendor	—	8.80	HHDT,MHDT
Demobilization - Year 1.	Hauling	0.00	20.0	HHDT
Demobilization - Year 1.	Onsite truck	—	—	HHDT
Mobilization - Year 2.	—	—	—	—
Mobilization - Year 2.	Worker	2.50	14.3	LDA,LDT1,LDT2
Mobilization - Year 2.	Vendor	—	8.80	HHDT,MHDT
Mobilization - Year 2.	Hauling	0.00	20.0	HHDT
Mobilization - Year 2.	Onsite truck	—	—	HHDT
Wetland Channels	—	—	—	—
Wetland Channels	Worker	3.00	14.3	LDA,LDT1,LDT2
Wetland Channels	Vendor	0.00	8.80	HHDT,MHDT
Wetland Channels	Hauling	0.00	20.0	HHDT
Wetland Channels	Onsite truck	—	—	HHDT
Relocate Channel Fill	—	—	—	—
Relocate Channel Fill	Worker	3.00	14.3	LDA,LDT1,LDT2
Relocate Channel Fill	Vendor	0.00	8.80	HHDT,MHDT
Relocate Channel Fill	Hauling	114	20.0	HHDT
Relocate Channel Fill	Onsite truck	—	—	HHDT
Clearing and Grubbing	—	—	—	—

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Clearing and Grubbing	Worker	2.50	14.3	LDA,LDT1,LDT2
Clearing and Grubbing	Vendor	—	8.80	HHDT,MHDT
Clearing and Grubbing	Hauling	55.0	20.0	HHDT
Clearing and Grubbing	Onsite truck	—	—	HHDT
Import Fill	—	—	—	—
Import Fill	Worker	2.50	14.3	LDA,LDT1,LDT2
Import Fill	Vendor	—	8.80	HHDT,MHDT
Import Fill	Hauling	120	20.0	HHDT
Import Fill	Onsite truck	—	—	HHDT
Excavation to Disposal	—	—	—	—
Excavation to Disposal	Worker	8.00	14.3	LDA,LDT1,LDT2
Excavation to Disposal	Vendor	0.00	8.80	HHDT,MHDT
Excavation to Disposal	Hauling	0.00	20.0	HHDT
Excavation to Disposal	Onsite truck	—	—	HHDT
Geotextile Fabric	—	—	—	—
Geotextile Fabric	Worker	3.00	14.3	LDA,LDT1,LDT2
Geotextile Fabric	Vendor	0.00	8.80	HHDT,MHDT
Geotextile Fabric	Hauling	0.00	20.0	HHDT
Geotextile Fabric	Onsite truck	—	—	HHDT
Seeding and Mulching	—	—	—	—
Seeding and Mulching	Worker	3.00	14.3	LDA,LDT1,LDT2
Seeding and Mulching	Vendor	0.00	8.80	HHDT,MHDT
Seeding and Mulching	Hauling	0.00	20.0	HHDT
Seeding and Mulching	Onsite truck	—	—	HHDT
Demobilization -Year 2	—	—	—	—
Demobilization -Year 2	Worker	3.00	14.3	LDA,LDT1,LDT2
Demobilization -Year 2	Vendor	0.00	8.80	HHDT,MHDT
Demobilization -Year 2	Hauling	1.00	20.0	HHDT
Demobilization -Year 2	Onsite truck	—	—	HHDT
IWM	—	—	—	—
IWM	Worker	3.00	14.3	LDA,LDT1,LDT2
IWM	Vendor	0.00	8.80	HHDT,MHDT
IWM	Hauling	1.00	20.0	HHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
IWM	Onsite truck	—	—	HHDT
Live Willow Cutting	—	—	—	—
Live Willow Cutting	Worker	3.00	14.3	LDA,LDT1,LDT2
Live Willow Cutting	Vendor	0.00	8.80	HHDT,MHDT
Live Willow Cutting	Hauling	1.00	20.0	HHDT
Live Willow Cutting	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Mobilization - Year 1	—	—	—	—
Mobilization - Year 1	Worker	2.50	14.3	LDA,LDT1,LDT2
Mobilization - Year 1	Vendor	—	8.80	HHDT,MHDT
Mobilization - Year 1	Hauling	0.00	20.0	HHDT
Mobilization - Year 1	Onsite truck	—	—	HHDT
Stump Removal	—	—	—	—
Stump Removal	Worker	2.50	14.3	LDA,LDT1,LDT2
Stump Removal	Vendor	—	8.80	HHDT,MHDT
Stump Removal	Hauling	271	20.0	HHDT
Stump Removal	Onsite truck	—	—	HHDT
Demobilization - Year 1.	—	—	—	—
Demobilization - Year 1.	Worker	2.50	14.3	LDA,LDT1,LDT2
Demobilization - Year 1.	Vendor	—	8.80	HHDT,MHDT
Demobilization - Year 1.	Hauling	0.00	20.0	HHDT
Demobilization - Year 1.	Onsite truck	—	—	HHDT
Mobilization - Year 2.	—	—	—	—
Mobilization - Year 2.	Worker	2.50	14.3	LDA,LDT1,LDT2
Mobilization - Year 2.	Vendor	—	8.80	HHDT,MHDT
Mobilization - Year 2.	Hauling	0.00	20.0	HHDT
Mobilization - Year 2.	Onsite truck	—	—	HHDT
Wetland Channels	—	—	—	—
Wetland Channels	Worker	3.00	14.3	LDA,LDT1,LDT2
Wetland Channels	Vendor	0.00	8.80	HHDT,MHDT

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Wetland Channels	Hauling	0.00	20.0	HHDT
Wetland Channels	Onsite truck	—	—	HHDT
Relocate Channel Fill	—	—	—	—
Relocate Channel Fill	Worker	3.00	14.3	LDA,LDT1,LDT2
Relocate Channel Fill	Vendor	0.00	8.80	HHDT,MHDT
Relocate Channel Fill	Hauling	114	20.0	HHDT
Relocate Channel Fill	Onsite truck	—	—	HHDT
Clearing and Grubbing	—	—	—	—
Clearing and Grubbing	Worker	2.50	14.3	LDA,LDT1,LDT2
Clearing and Grubbing	Vendor	—	8.80	HHDT,MHDT
Clearing and Grubbing	Hauling	55.0	20.0	HHDT
Clearing and Grubbing	Onsite truck	—	—	HHDT
Import Fill	—	—	—	—
Import Fill	Worker	2.50	14.3	LDA,LDT1,LDT2
Import Fill	Vendor	—	8.80	HHDT,MHDT
Import Fill	Hauling	120	20.0	HHDT
Import Fill	Onsite truck	—	—	HHDT
Excavation to Disposal	—	—	—	—
Excavation to Disposal	Worker	8.00	14.3	LDA,LDT1,LDT2
Excavation to Disposal	Vendor	0.00	8.80	HHDT,MHDT
Excavation to Disposal	Hauling	0.00	20.0	HHDT
Excavation to Disposal	Onsite truck	—	—	HHDT
Geotextile Fabric	—	—	—	—
Geotextile Fabric	Worker	3.00	14.3	LDA,LDT1,LDT2
Geotextile Fabric	Vendor	0.00	8.80	HHDT,MHDT
Geotextile Fabric	Hauling	0.00	20.0	HHDT
Geotextile Fabric	Onsite truck	—	—	HHDT
Seeding and Mulching	—	—	—	—
Seeding and Mulching	Worker	3.00	14.3	LDA,LDT1,LDT2
Seeding and Mulching	Vendor	0.00	8.80	HHDT,MHDT
Seeding and Mulching	Hauling	0.00	20.0	HHDT
Seeding and Mulching	Onsite truck	—	—	HHDT
Demobilization -Year 2	—	—	—	—

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demobilization -Year 2	Worker	3.00	14.3	LDA,LDT1,LDT2
Demobilization -Year 2	Vendor	0.00	8.80	HHDT,MHDT
Demobilization -Year 2	Hauling	1.00	20.0	HHDT
Demobilization -Year 2	Onsite truck	—	—	HHDT
IWM	—	—	—	—
IWM	Worker	3.00	14.3	LDA,LDT1,LDT2
IWM	Vendor	0.00	8.80	HHDT,MHDT
IWM	Hauling	1.00	20.0	HHDT
IWM	Onsite truck	—	—	HHDT
Live Willow Cutting	—	—	—	—
Live Willow Cutting	Worker	3.00	14.3	LDA,LDT1,LDT2
Live Willow Cutting	Vendor	0.00	8.80	HHDT,MHDT
Live Willow Cutting	Hauling	1.00	20.0	HHDT
Live Willow Cutting	Onsite truck	—	—	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 (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Stump Removal	0.00	10,820	200	0.00	—
Mobilization - Year 2.	0.00	0.00	200	0.00	—
Clearing and Grubbing	0.00	433	200	0.00	—
Import Fill	7,670	0.00	200	0.00	—
Relocate Channel Fill	7,280	0.00	200	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
User Defined Recreational	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005

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	22.7	annual days of extreme heat
Extreme Precipitation	2.70	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	16.2	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	2	0	0	N/A
Extreme Precipitation	1	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	2	1	1	3
Extreme Precipitation	1	1	1	2
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	40.0
AQ-PM	25.1
AQ-DPM	20.9
Drinking Water	93.8
Lead Risk Housing	75.5
Pesticides	88.6
Toxic Releases	18.4
Traffic	25.8
Effect Indicators	—
CleanUp Sites	41.6
Groundwater	91.2
Haz Waste Facilities/Generators	61.6
Impaired Water Bodies	97.5
Solid Waste	59.2
Sensitive Population	—
Asthma	45.2
Cardio-vascular	53.1
Low Birth Weights	7.43
Socioeconomic Factor Indicators	—
Education	70.8
Housing	23.4
Linguistic	69.2
Poverty	73.5
Unemployment	51.3

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	44.02669062
Employed	15.11612986
Median HI	45.01475683
Education	—
Bachelor's or higher	33.8380598
High school enrollment	100
Preschool enrollment	95.7141024
Transportation	—
Auto Access	97.49775439
Active commuting	81.32939818
Social	—
2-parent households	69.88322854
Voting	87.4117798
Neighborhood	—
Alcohol availability	73.78416528
Park access	13.83292699
Retail density	2.527909663
Supermarket access	2.399589375
Tree canopy	78.3908636
Housing	—
Homeownership	47.28602592
Housing habitability	86.34672142
Low-inc homeowner severe housing cost burden	65.7128192
Low-inc renter severe housing cost burden	96.49685615
Uncrowded housing	51.79006801
Health Outcomes	—
Insured adults	42.12755037
Arthritis	0.0
Asthma ER Admissions	65.6

High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	41.1
Cognitively Disabled	19.2
Physically Disabled	25.6
Heart Attack ER Admissions	45.3
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	91.2
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	53.3
Elderly	22.1
English Speaking	44.0
Foreign-born	46.6
Outdoor Workers	11.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	94.2
Traffic Density	37.6
Traffic Access	23.0
Other Indices	—
Hardship	68.3

Other Decision Support	—
2016 Voting	79.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	64.0
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	Acreage provided by USACE.
Construction: Construction Phases	Phasing provided by USACE.
Construction: Off-Road Equipment	Equipment use and horsepower provided by USACE.
Construction: Dust From Material Movement	Provided by USACE.
Construction: Architectural Coatings	No architectural coating is needed.
Construction: Trips and VMT	Hauling information provided by USACE.

Appendix D. Biological Resources Mapping and Data

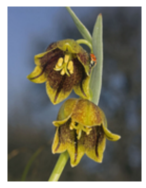
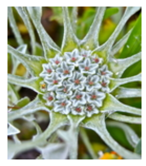
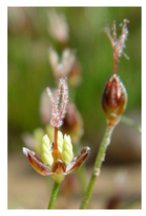
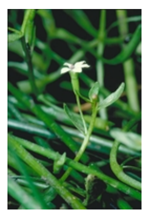
[CNPS Rare Plant Inventory](#)

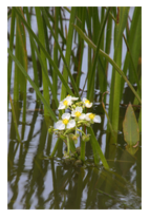
Search Results

25 matches found. Click on scientific name for details

Search Criteria: Quad is one of [**3812165:3812164:3812155:3812154:3812153:3812145:3812144:3812125:3812126**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	None	None	G2T1	S1	1B.1	Yes	1994-01-01	No Photo Available
Brodiaea rosea ssp. vallicola	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	None	None	G5T3	S3	4.2	Yes	2019-01-07	 © 2011 Steven Perry
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	None	None	G5	S2	2B.1		1994-01-01	 Dean Wm. Taylor 1997
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.2	Yes	2004-01-01	 © 2016 John Doyen
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	None	None	G3T3	S3	4.2	Yes	2007-05-22	 © 2019 John Doyen
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	Jul-Sep	None	None	G5T4T5	S2?	2B.1		1974-01-01	 © 2007 Doreen L Smith
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	None	None	G5T4?	SH	2B.2		2011-08-24	No Photo Available
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	None	None	GU	S2	2B.2		1980-01-01	 © 2013 Aaron Arthur
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2	Yes	1988-01-01	No Photo Available

Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G3	S3	4.2	Yes	1980-01-01	 © 2016 Aaron Schusteff
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	None	CE	G2	S2	1B.2		1974-01-01	 ©2004 Carol W. Witham
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	None	None	G3	S3	4.2	Yes	2001-01-01	 © 2017 John Doyen
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	None	None	G5T3	S3	1B.2	Yes	1974-01-01	 © 2020 Steven Perry
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	None	None	G2T1	S1	1B.2	Yes	1984-01-01	 © 2004 Carol W. Witham
Lasthenia chrysantha	alkali-sink goldfields	Asteraceae	annual herb	Feb-Apr	None	None	G2	S2	1B.1	Yes	2019-09-30	 © 2009 California State University, Stanislaus
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	None	None	G5T2	S2	1B.2	Yes	1974-01-01	 © 2003 Mark Fogiel
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.1	Yes	1974-01-01	 ©2000 John Game
Lepidium latipes var. heckardii	Heckard's pepper-grass	Brassicaceae	annual herb	Mar-May	None	None	G4T1	S1	1B.2	Yes	1994-01-01	 2018 Jennifer Buck

Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	None	CR	G2	S2	1B.1	Yes	1974-01-01	No Photo Available
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	May-Aug	None	None	G4G5	S2	2B.1		1994-01-01	 © 2020 Richard Sage
Orcuttia viscida	Sacramento Orcutt grass	Poaceae	annual herb	Apr-Jul(Sep)	FE	CE	G1	S1	1B.1	Yes	1974-01-01	 © Rick York and CNPS
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2	Yes	1984-01-01	 ©2013 Debra L. Cook
Scutellaria lateriflora	side-flowering skullcap	Lamiaceae	perennial rhizomatous herb	Jul-Sep	None	None	G5	S2	2B.2		1994-01-01	No Photo Available
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.2	Yes	2001-01-01	 © 2005 Dean Wm Taylor

Showing 1 to 25 of 25 entries

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 16 November 2023].

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Taylor Monument (3812165) OR Rio Linda (3812164) OR Sacramento West (3812155) OR Sacramento East (3812154) OR Carmichael (3812153) OR Clarksburg (3812145) OR Florin (3812144) OR Isleton (3812125) OR Rio Vista (3812126))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Acipenser medirostris pop. 1 green sturgeon - southern DPS	AFCAA01031	Threatened	None	G2T1	S1	
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Anthicus antiochensis Antioch Dunes anthicid beetle	IICOL49020	None	None	G3	S3	
Anthicus sacramento Sacramento anthicid beetle	IICOL49010	None	None	G4	S4	
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Archoplites interruptus Sacramento perch	AFCQB07010	None	None	G1	S1	SSC
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Astragalus tener var. ferrisiae Ferris' milk-vetch	PDFAB0F8R3	None	None	G2T1	S1	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S2	SSC
Bombus pensylvanicus American bumble bee	IIHYM24260	None	None	G3G4	S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Branchinecta mesovallensis midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S4	
Carex comosa bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
Centromadia parryi ssp. parryi pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Cicindela hirticollis abrupta Sacramento Valley tiger beetle	IICOL02106	None	None	G5TH	SH	
Cicuta maculata var. bolanderi Bolander's water-hemlock	PDAPI0M051	None	None	G5T4T5	S2?	2B.1
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Cuscuta obtusiflora var. glandulosa Peruvian dodder	PDCUS01111	None	None	G5T4?	SH	2B.2
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T3	S3	
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Dumontia oregonensis hairy water flea	ICBRA23010	None	None	G1G3	S1	
Egretta thula snowy egret	ABNGA06030	None	None	G5	S4	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Elderberry Savanna Elderberry Savanna	CTT63440CA	None	None	G2	S2.1	
Emys marmorata western pond turtle	ARAAD02030	Proposed Threatened	None	G3G4	S3	SSC
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Falco columbarius merlin	ABNKD06030	None	None	G5	S3S4	WL
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	
Fritillaria agrestis stinkbells	PMLIL0V010	None	None	G3	S3	4.2
Gonidea angulata western ridged mussel	IMBIV19010	None	None	G3	S2	
Gratiola heterosepala Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	G2	S2	1B.2
Great Valley Cottonwood Riparian Forest Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	G2	S2.1	
Hibiscus lasiocarpos var. occidentalis woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
Hydrochara rickseckeri Ricksecker's water scavenger beetle	IICOL5V010	None	None	G2?	S2?	
Hypomesus transpacificus Delta smelt	AFCHB01040	Threatened	Endangered	G1	S1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Juncus leiospermus var. ahartii Ahart's dwarf rush	PMJUN011L1	None	None	G2T1	S1	1B.2
Lasiurus cinereus hoary bat	AMACC05032	None	None	G3G4	S4	
Lasiurus frantzii western red bat	AMACC05080	None	None	G4	S3	SSC
Lasthenia chrysantha alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3T1	S2	FP
Lathyrus jepsonii var. jepsonii Delta tule pea	PDFAB250D2	None	None	G5T2	S2	1B.2
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Lepidium latipes var. heckardii Heckard's pepper-grass	PDBRA1M0K1	None	None	G4T1	S1	1B.2
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G3	S3	
Lilaeopsis masonii Mason's lilaeopsis	PDAPI19030	None	Rare	G2	S2	1B.1
Limosella australis Delta mudwort	PDSCR10030	None	None	G4G5	S2	2B.1
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Melospiza melodia pop. 1 song sparrow ("Modesto" population)	ABPBXA3013	None	None	G5T3?Q	S3?	SSC
Nannopterum auritum double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Nycticorax nycticorax black-crowned night heron	ABNGA11010	None	None	G5	S4	
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Oncorhynchus tshawytscha pop. 11 chinook salmon - Central Valley spring-run ESU	AFCHA0205L	Threatened	Threatened	G5T2Q	S2	
Oncorhynchus tshawytscha pop. 7 chinook salmon - Sacramento River winter-run ESU	AFCHA0205B	Endangered	Endangered	G5T1Q	S2	
Orcuttia viscida Sacramento Orcutt grass	PMPOA4G070	Endangered	Endangered	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Pogonichthys macrolepidotus Sacramento splittail	AFCJB34020	None	None	G3	S3	SSC
Progne subis purple martin	ABPAU01010	None	None	G5	S3	SSC
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S3	
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
Scutellaria lateriflora side-flowering skullcap	PDLAM1U0Q0	None	None	G5	S2	2B.2
Spea hammondii western spadefoot	AAABF02020	None	None	G2G3	S3S4	SSC
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
Symphyotrichum lentum Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis gigas giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S3	
Xanthocephalus xanthocephalus yellow-headed blackbird	ABPBXB3010	None	None	G5	S3	SSC

Record Count: 73

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Project information

NAME

SEIS Overall

LOCATION

Sacramento County, California

DESCRIPTION

Some(All contracts from the 2023 SEIS/SEIR. NOTE: These are old footprints and must be updated, but this is a good start.)

Local offices

San Francisco Bay-Delta Fish And Wildlife

(916) 930-5603
(916) 930-5654

650 Capitol Mall
Suite 8-300
Sacramento, CA 95814

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4240	Endangered
Least Bell's Vireo *Vireo bellii pusillus* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5945	Endangered
Yellow-billed Cuckoo *Coccyzus americanus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS

NAME	STATUS
Giant Garter Snake Thamnophis gigas Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened
Northwestern Pond Turtle Actinemys marmorata Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

Amphibians

NAME	STATUS
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus Wherever found There is **final** critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened
Longfin Smelt Spirinchus thaleichthys No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9011	Proposed Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp Branchinecta conservatio Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8246	Endangered

Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Sacramento Orcutt Grass Orcuttia viscida Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5507	Endangered
Slender Orcutt Grass Orcuttia tenuis Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1063	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Delta Smelt Hypomesus transpacificus https://ecos.fws.gov/ecp/species/321#crithab	Final

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

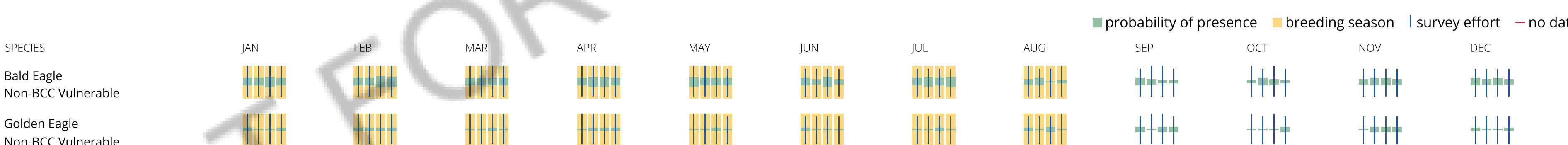
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/ documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow *Passerculus sandwichensis beldingi* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Black Skimmer *Rynchops niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15

Black Swift Cypseloides niger — Breeds Jun 15 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8878

Black Tern Chlidonias niger — Breeds May 15 to Aug 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3093

Black-chinned Sparrow Spizella atrogularis — Breeds Apr 15 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9447

Bullock's Oriole Icterus bullockii — Breeds Mar 21 to Jul 25

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

California Gull Larus californicus — Breeds Mar 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe Aechmophorus clarkii — Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Long-eared Owl asio otus — Breeds Mar 1 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3631

Marbled Godwit Limosa fedoa — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus | Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi | Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Short-billed Dowitcher Limnodromus griseus | Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Tricolored Blackbird Agelaius tricolor | Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Western Grebe aechmophorus occidentalis | Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Willet Tringa semipalmata | Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wrentit Chamaea fasciata | Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-billed Magpie Pica nuttalli | Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

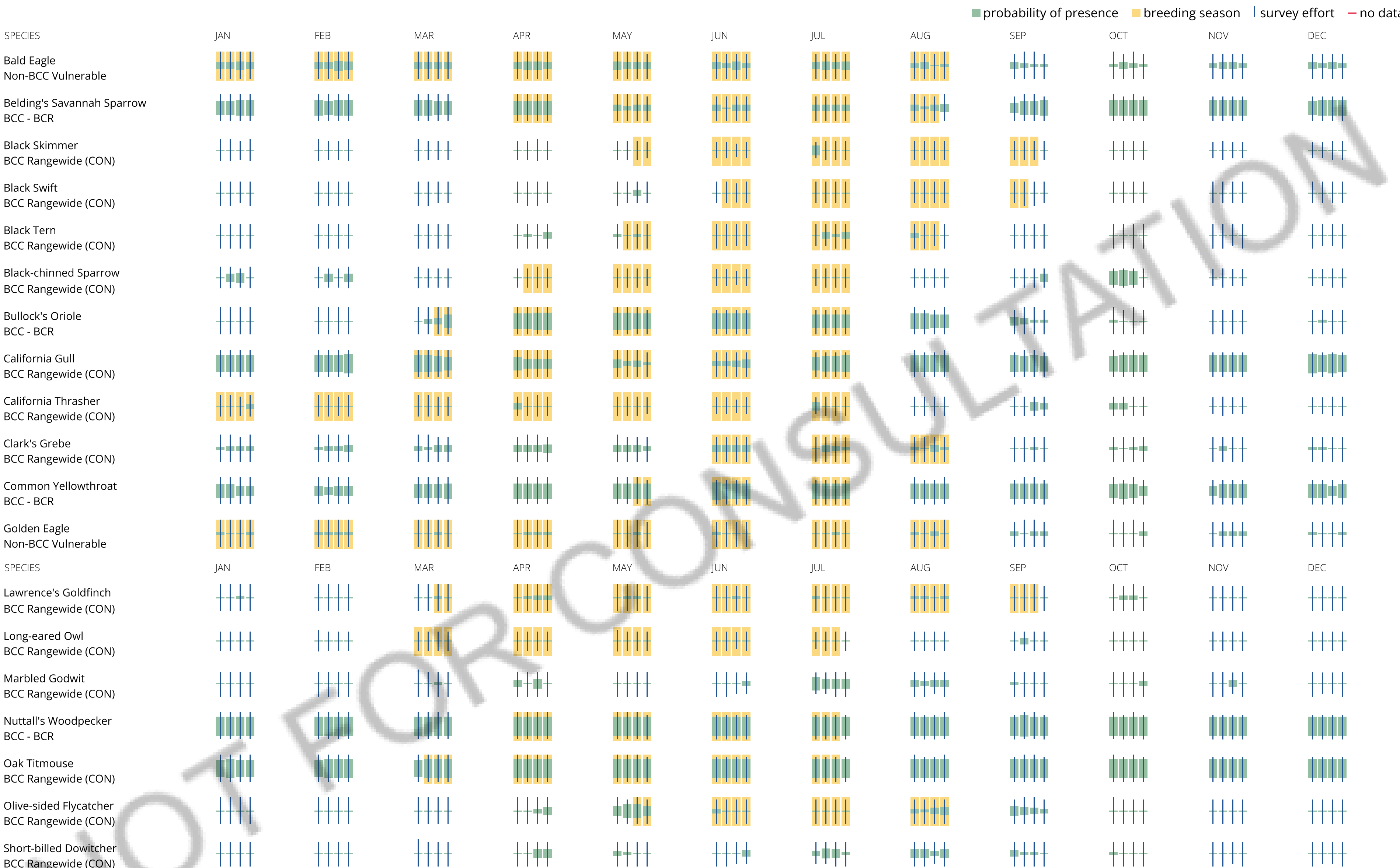
Survey Effort (|)

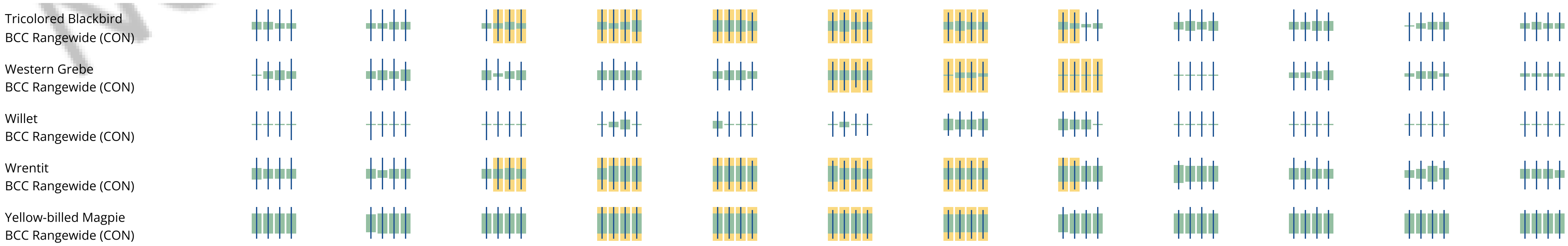
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Appendix E. Farmland Conversion Impact Rating Form

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request : 06/01/2023
Name of Project American River Common Features	Federal Agency Involved : USACE
Proposed Land Use : Floodplane	County and State : SAFCA and DWR(CVFPB)

PART II *(To be completed by NRCS)*	Date Request Received By NRCS 06/01/2023	Person Completing Form: Luis Alvarez

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ✓ NO ☐	Acres Irrigated 234,703	Average Farm Size 484 acres
Major Crop(s) Almonds, Tomatoes, and Grapes/Wine	Farmable Land In Govt. Jurisdiction Acres: 482,645 % 73.9	Amount of Farmland As Defined in FPPA Acres: 352,555 % 54	
Name of Land Evaluation System Used CA Revised Storie Index	Name of State or Local Site Assessment System None	Date Land Evaluation Returned by NRCS 06/12/2023	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	168			
B. Total Acres To Be Converted Indirectly	172			
C. Total Acres In Site	340			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	323.8			
B. Total Acres Statewide Important or Local Important Farmland	11.9			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.0952			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	37.50			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	50			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	13			
2. Perimeter In Non-urban Use	(10)	10			
3. Percent Of Site Being Farmed	(20)	19			
4. Protection Provided By State and Local Government	(20)	20			
5. Distance From Urban Built-up Area	(15)	11			
6. Distance To Urban Support Services	(15)	0			
7. Size Of Present Farm Unit Compared To Average	(10)	8			
8. Creation Of Non-farmable Farmland	(10)	10			
9. Availability Of Farm Support Services	(5)	4			
10. On-Farm Investments	(20)	10			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	0			
TOTAL SITE ASSESSMENT POINTS	160	105	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	50	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	105	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	155	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ✓

Reason For Selection:

Name of Federal agency representative completing this form: Nicole Schleeter	Date: 6/1/2023

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Appendix F. Appendix F: Draft Hydraulic Study Report

HYDRAULIC SUMMARY
MAGPIE CREEK CANAL
FOR AMERICAN RIVER COMMON FEATURES PROJECT

Near Natomas

Sacramento County, California

October 2023

Prepared for:

United States Army Corps of Engineers (USACE)
Sacramento District (SPK)
1325 J St.
Sacramento, CA 95814

Prepared By:

United States Army Corps of Engineers (USACE)
Vicksburg District (MVK)
4155 Clay Street
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SUMMARY OF FINDINGS

The United States Army Corps of Engineers (USACE) – Vicksburg District (MVK) Hydraulics Branch modeled Magpie Creek Canal Basin for levee design and assessed the proposed hydraulic improvements outlined in the American River Common Features (ARCF 2016) - Engineering Documentation Report (EDR) for the Pre-construction Engineering and Design (PED) phase of the project.

Preventing flooding along the old Magpie Creek channel is the main purpose of improving, raising, and extending the Magpie Creek Canal levee. Instead of overtopping the existing levee at the approximate 7% Annual Exceedance Probability (AEP) event (comparable to a 15-year storm event), the post-project floodwaters are to be re- routed to the north using the Magpie Creek Canal, and then discharged into the Robla Creek floodplain.

As a result of raising the levee, a rise in peak discharge and volume within Magpie Creek Canal is expected. To compensate for these increases, additional hydraulic improvements are included within the project to convey the 0.5% Annual Exceedance Probability (AEP) storm event (1/200). These improvements include the following:

1) Installation of a triple cell 5'x5'reinforced concrete box culvert under the Sacramento Northern Bike Trail at Robla Creek
2) Installation of a new road crossing (triple cell 10'X7' RCBC) with an accompanying grade raise at Raley Boulevard
3) Providing channel widening to an 18' channel bottom upstream of Raley Blvd to Vinci Ave.
4) Completion channel clearing improvements along Magpie Creek, from Vinci Avenue to Dry Creek Road. Maintenance roads adjacent to the left and right descending banks is also planned along Magpie Creek Canal from Vinci Avenue to Dry Creek Road.
5) Completion a levee raise from Vinci to Raley Boulevard.
6) Completion of an additional levee section along Magpie Creek Canal Upstream and east of Raley Boulevard (Figure 1-1).
7) Purchase of eighty acres for floodplain attenuation

Updated 2019 hydrology was provided by Sacramento District (SPK) for use within the HEC-RAS hydraulic model. Pre-Project and Post-Project simulations were executed to determine the hydraulic impact of the proposed improvements, while also providing a 200-year event water surface profile to aid in levee design.

The project will protect the Old Magpie Channel floodplain and prevent flood damages in the urban area up to the 0.5% AEP (200-yr) storm event. The project will also increase the base flood (1% AEP) discharge and base flood elevation within the mapped FEMA Special Flood Hazard Area along Magpie Creek Canal. Therefore, coordination with appropriate FEMA personnel is advised.

1.0 INTRODUCTION

The United States Army Corps of Engineers (USACE) – Vicksburg District (MVK) was asked to design the proposed improvements for the Magpie Creek and Robla Creek portions of the American River Common Features (ARCF), General Reevaluation Report (GRR), and Environmental Impact Report (EIS). The proposed improvements for this project include:

1) Installation of a triple cell 5’x5’reinforced concrete box culvert under the Sacramento Northern Bike Trail at Robla Creek
2) Installation of a new road crossing (triple cell 10'X7' RCBC) with an accompanying grade raise at Raley Boulevard
3) Providing channel widening to an 18' channel bottom upstream of Raley Blvd to Vinci Ave.
4) Completion channel clearing improvements along Magpie Creek, from Vinci Avenue to Dry Creek Road. Maintenance roads adjacent to the left and right descending banks is also planned along Magpie Creek Canal from Vinci Avenue to Dry Creek Road.
5) Completion a levee raise from Vinci to Raley Boulevard.
6) Completion of an additional levee section along Magpie Creek Canal Upstream and east of Raley Boulevard (Figure 1-1).
7) Purchase of eighty acres for floodplain attenuation

The MVK Hydraulics Branch updated the Magpie Creek and Robla Creek portion of the “ARCF16(w/CVHS19)” HEC-RAS model, received from USACE Sacramento District (SPK). SPK also provided the hydrologic files used in the study. This report will document the hydraulic and hydrologic model updates used to develop the design water surface elevations for the project.

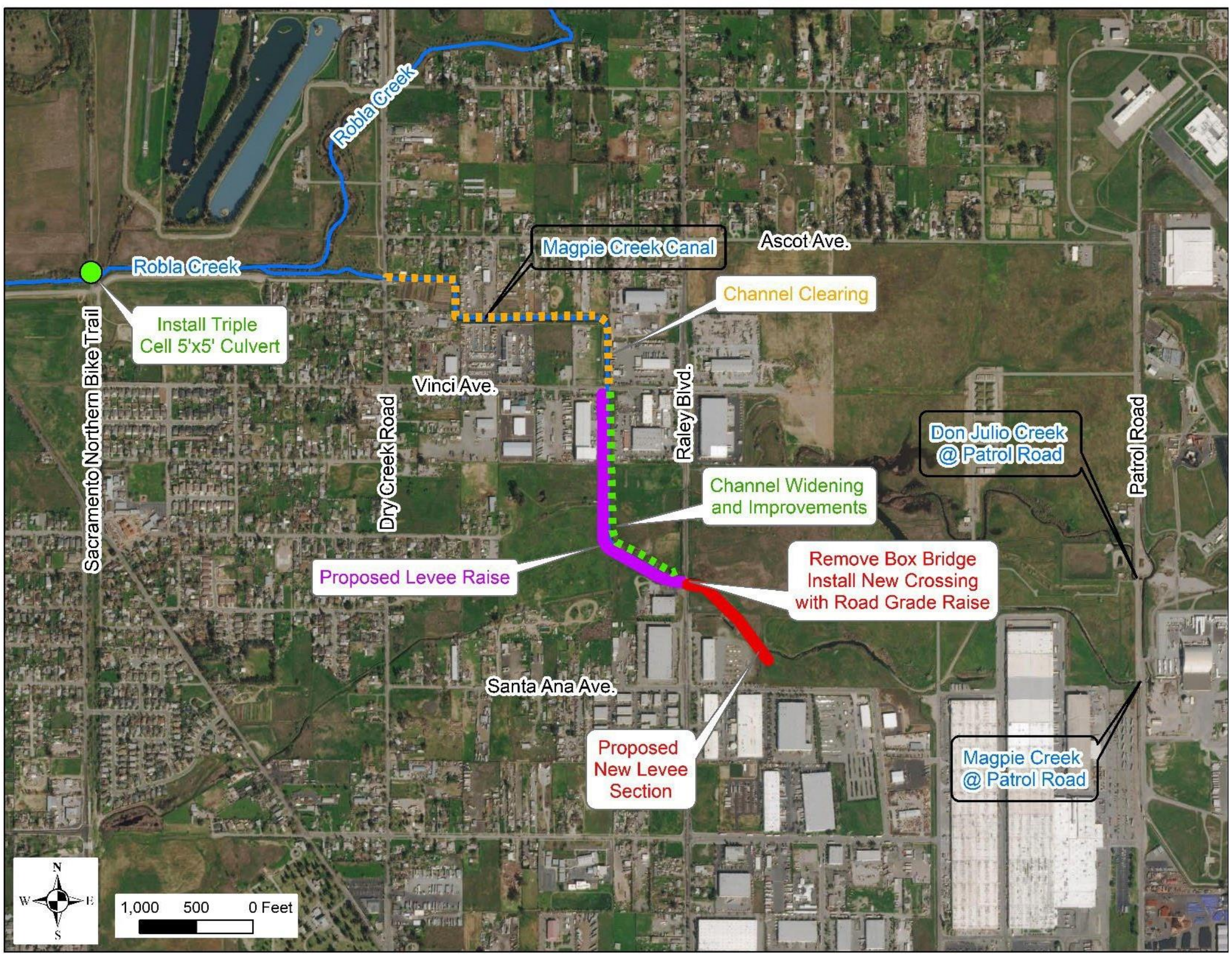

Figure 1-1: Study Area Proposed Improvements

2.0 SITE RECONNAISSANCE

A site visit was conducted by hydraulic and design MVK personnel on November 20, 2019, to assess existing site conditions. Brush, underbrush, and trees were observed within Magpie Canal. Similar conditions were noted at Robla Creek, adjacent to the Sacramento Northern Bike Trail. Photos from the site reconnaissance are attached in Appendix A.

3.0 HYDROLOGIC ANALYSIS

Hydrologic files were provided by SPK for this study, and a full report detailing the hydrologic methods can be reviewed in Appendix B. Four sub-basins from the hydrologic report were combined to create one hydrograph for Magpie Creek Canal, and include Magpie Creek at Patrol Road, Don Julio Creek at Patrol Road, and the local flows for each tributary between Patrol Road and Vinci Ave.

The downstream boundary conditions for Dry Creek and Robla Creek were input as a stage hydrograph, with stages extracted from the overall *RAS Rel6.2-ARCF16(w/CVHS19)* model, from SPK, at the appropriate downstream XS location (RS 0.054 and RS 0.046, respectively, located just east of the Natomas East Main Drainage Canal / NEMDC). These stages should reflect all basin wide model improvements for the "post project" condition from the GRR and EIS.

The downstream boundary condition stages used for pre-project and post-project runs are identical for this study. However, it is noted the downstream boundary backwater effects (for with-project conditions) should not greatly influence water stages along Magpie Creek, since Magpie Creek upstream of Vinci Ave is approximately 2.5 miles upstream of the downstream boundary conditions at the NEMDC. A sensitivity analysis of backwater stages at the NEMDC confirmed this assumption.

The Annual Exceedance Probability (AEP) events being evaluated for this project this project include the following: 50% (2 year), 10% (10 year), 4% (25 year), 2% (50 year), 1% (100 year), 0.5% (200 year), and 0.2% (500 year).

4.0 HYDRAULIC ANALYSIS

4.1 Post-Project Conditions

Hydrologic Engineering Center's River Analysis System (HEC-RAS) version 5.0.7 software was used for this hydraulic analysis. The obtained *RAS Rel6.2-ARCF16(w/CVHS19)* model was used as the base HEC-RAS geometry, and all reaches, except Dry Creek, Robla Creek, and Magpie Creek, were deleted; and all 2D flow areas except EastSide_South, Arcade Dry, and Magpie 2D were deleted. The Magpie and Arcade Dry 2D areas were merged, and are now named Magpie 2D, to adequately model the flow conveyance across Raley Blvd. The overall model layout is shown in Figure 4-3. The provided terrain, *Terrain.hdf*, was used as a base terrain (generated from LiDAR), and the proposed levee section east of Raley Boulevard was "burned/added" on top of the LiDAR to represent post project conditions within the 2D area. A Manning's "n" layer representing the National Land Cover 2016 database was used for the 2D Areas, and a 10'x7' refinement region was added to further define the proposed levee.

The 1D portion of the post-project model includes the proposed triple-cell 5'x5' RCBC at the bike path crossing and the proposed triple cell 10'x7' RCBC at Raley Boulevard. It also includes the proposed levee raise (modeled as an obstruction) along the west and south side of Magpie Creek Canal upstream (south) of Vinci Ave. A new levee was modeled east of Raley Boulevard within the 2D area to tie into high ground.

Considering the hydrologic peak discharges have increased since the original canal construction, channel improvements to the Magpie Creek Canal are needed to convey the 200-year design event and satisfies the conditions set forth in the EDR. However, it should be noted that no additional freeboard is provided. Therefore, storm events exceeding the 200-year design will overtop the levee section and flow into Old Magpie Creek. The channel improvements include channel clearing from Vinci Ave. to Dry Creek Road to improve conveyance capability. Channel widening and clearing from upstream of Raley Boulevard to Vinci Ave will also be performed. This will improve channel capacity and conveyance (Figure 4-1). The channel widening was modeled by editing the appropriate cross sections to an 18' flat bottom, with maximum 1(v):2(h) side slopes (Figure 4-2). A Manning's "n" roughness value of 0.03 is utilized for the clean, excavated channel.

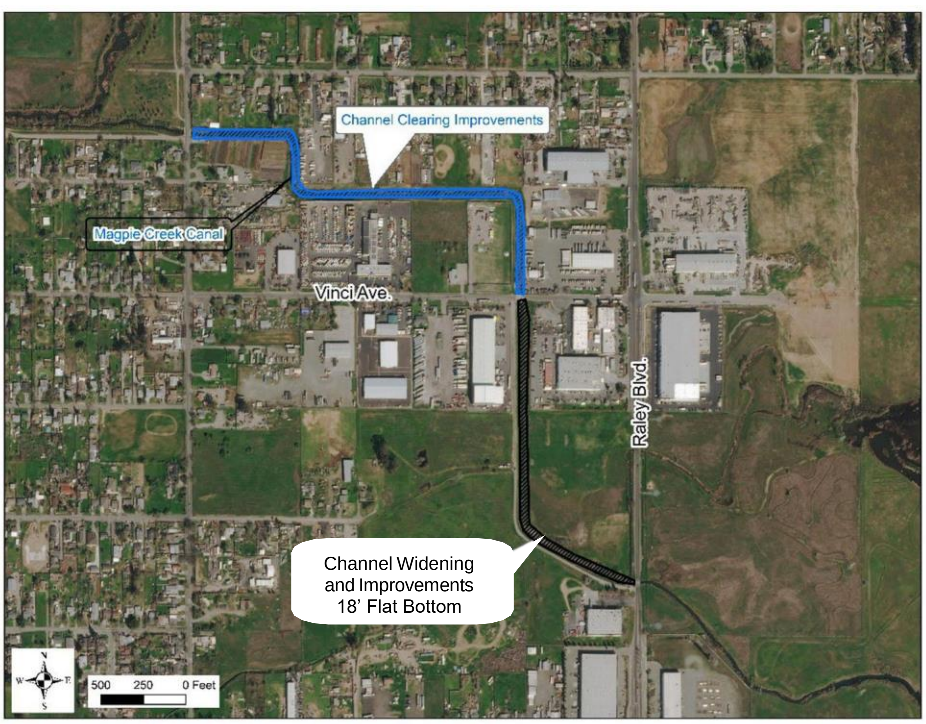

Figure 4-1: Channel Improvements Site Plan

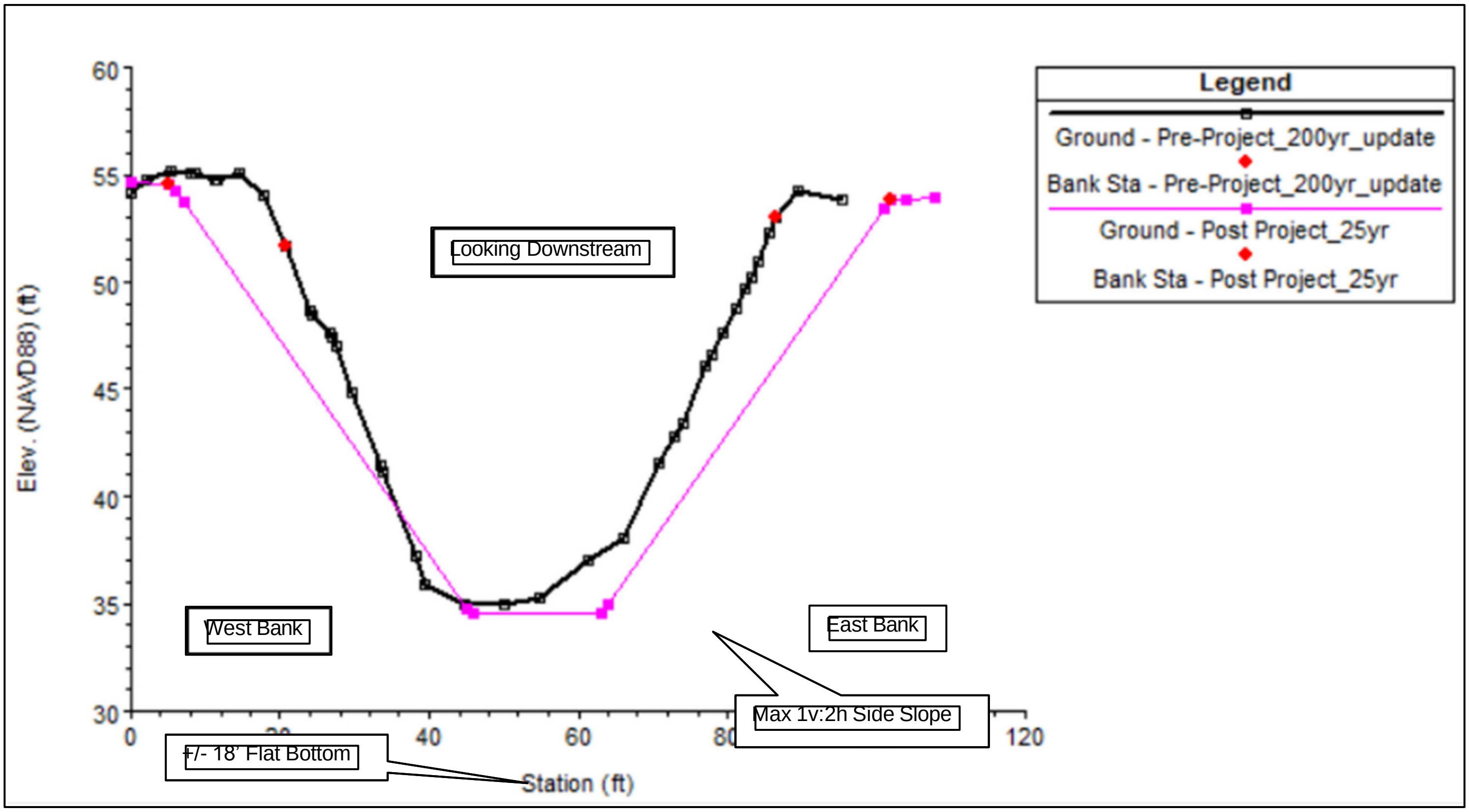

Figure 4-2: Channel Widening Typical Section

4.2 Pre-Project (Existing) Conditions

The Post-Project conditions model was saved as the Pre-Project geometry, and the proposed levee was removed from the terrain within the Magpie 2D area. Additionally, the proposed triple-cell 5'x5' RCBC at the bike path was removed from the bridge crossing geometry, and the proposed levee obstructions along Magpie Creek 1D were removed from the model. The western (left descending bank) lateral structure elevations were reduced to existing natural ground elevations. The channel improvements discussed above, including the channel geometry and Manning's "n" edits were modified to reflect existing conditions. This geometry was used as the Pre-Project Conditions model to compare with Post-Project Conditions.

Both Pre-Project and Post-Project models were executed for the studied AEP events listed in Section 3.0. HEC-RAS model hydraulic data output is provided in Appendix C. The resulting 1% AEP, 0.5% AEP and 0.2% AEP (100-year, 200-year, and 500-year) events for the Pre-Project and Post-Project models are shown in Figure 4-6 through Figure 4-9. All inundation plots are attached in Appendix E.

A map of the hydraulic model geometry displaying all cross-section river station locations for comparison with tables is included in Appendix C.

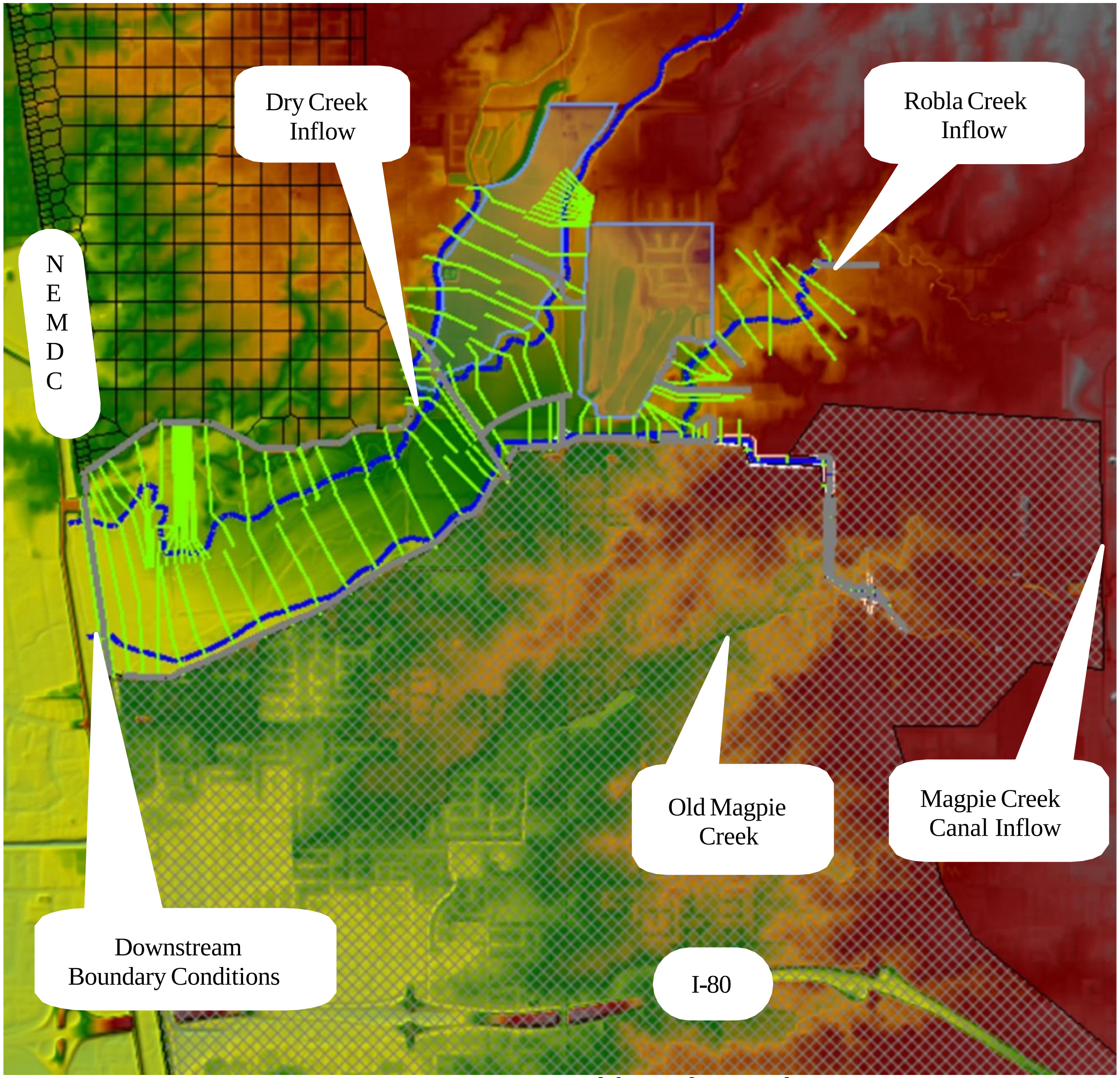

Figure 4-3: Post Project Model Boundary Conditions

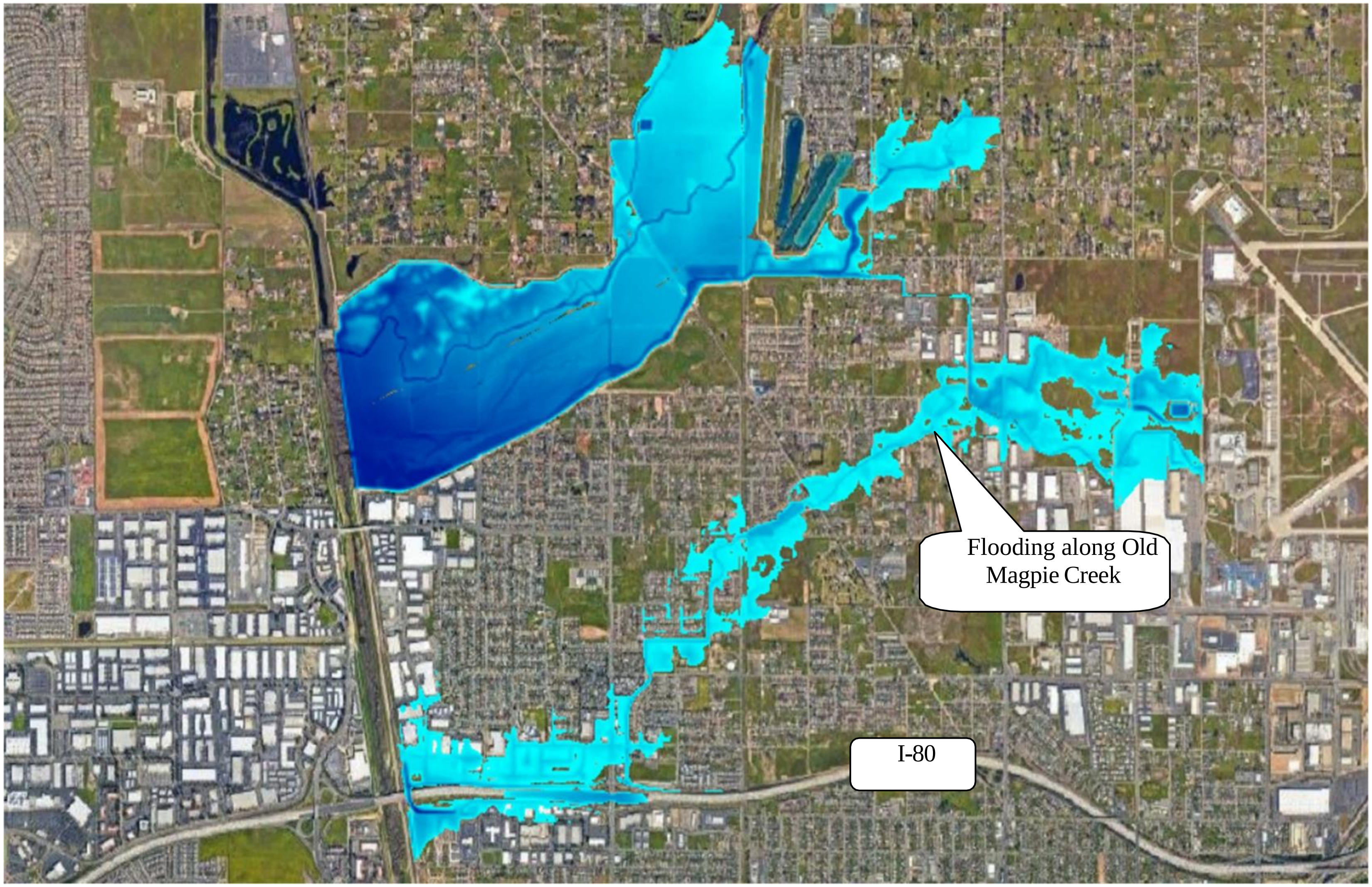

Figure 4-4: Pre-Project Conditions 1% (100 year) AEP Event Inundation

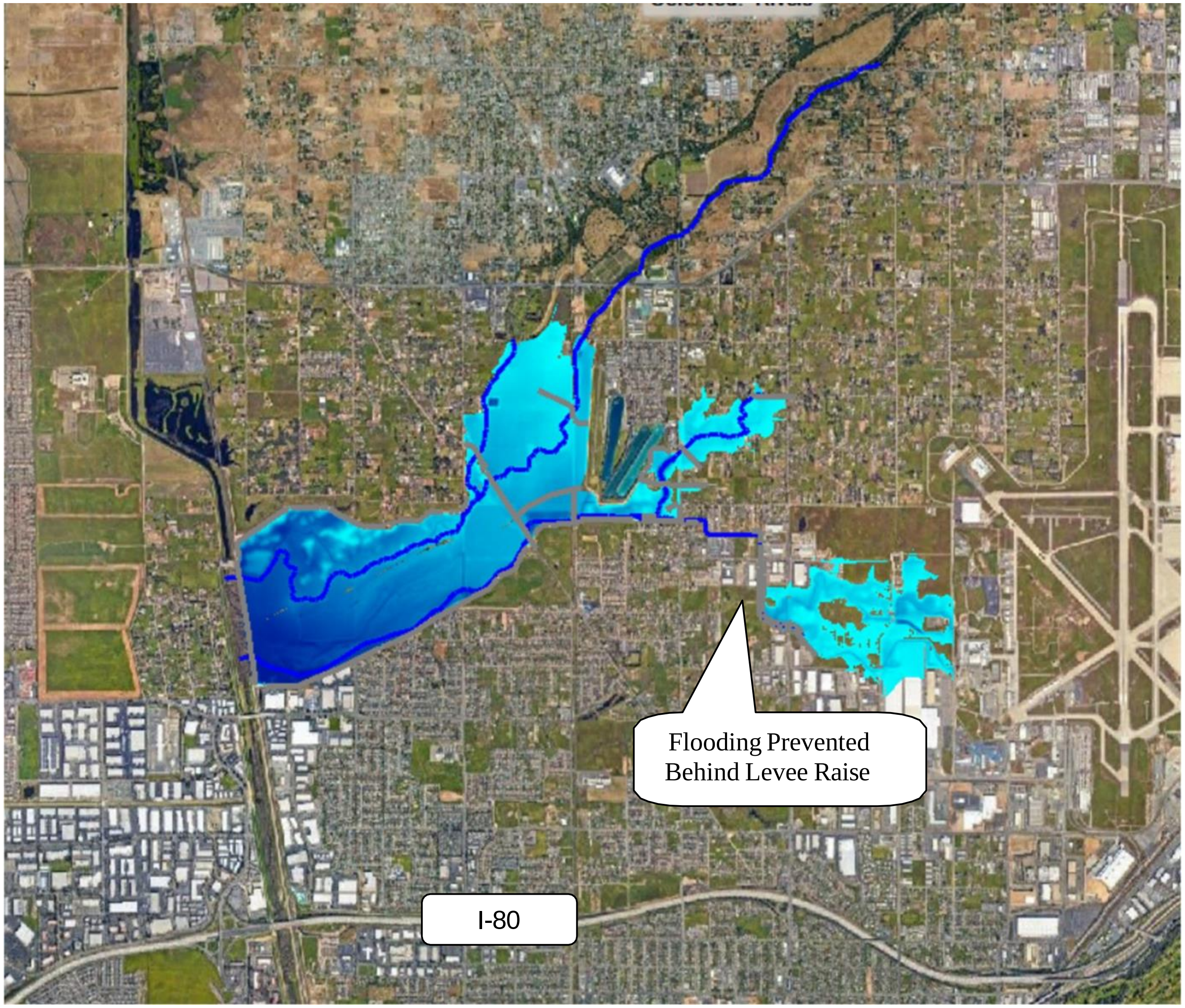

Figure 4-5: Post-Project Conditions 1% (100 year) AEP Event Inundation

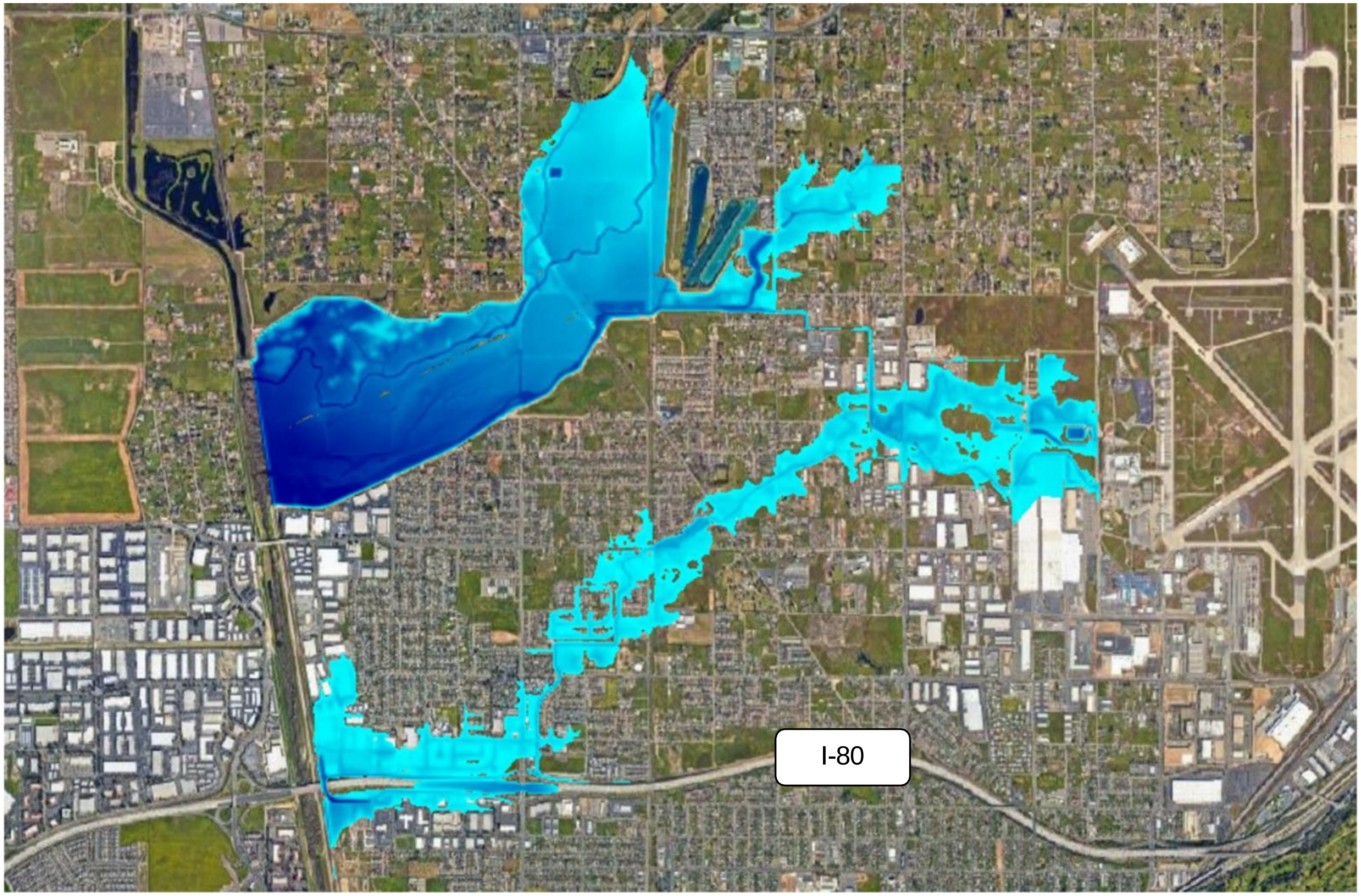

Figure 4-6: Pre-Project Conditions 0.5% (200 year) AEP Event Inundation

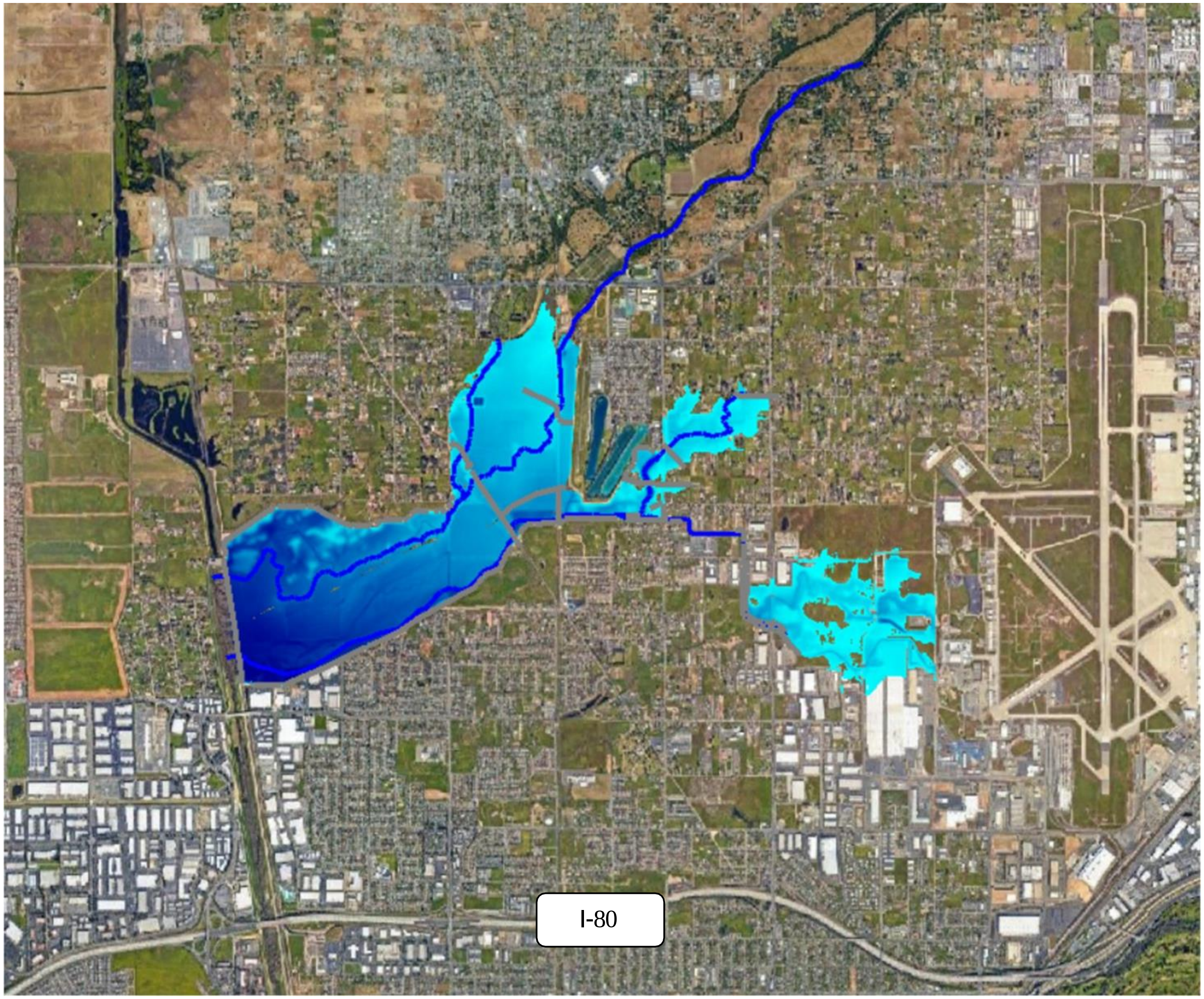

Figure 4-7: Post-Project Conditions 0.5% (200 year) AEP Event Inundation

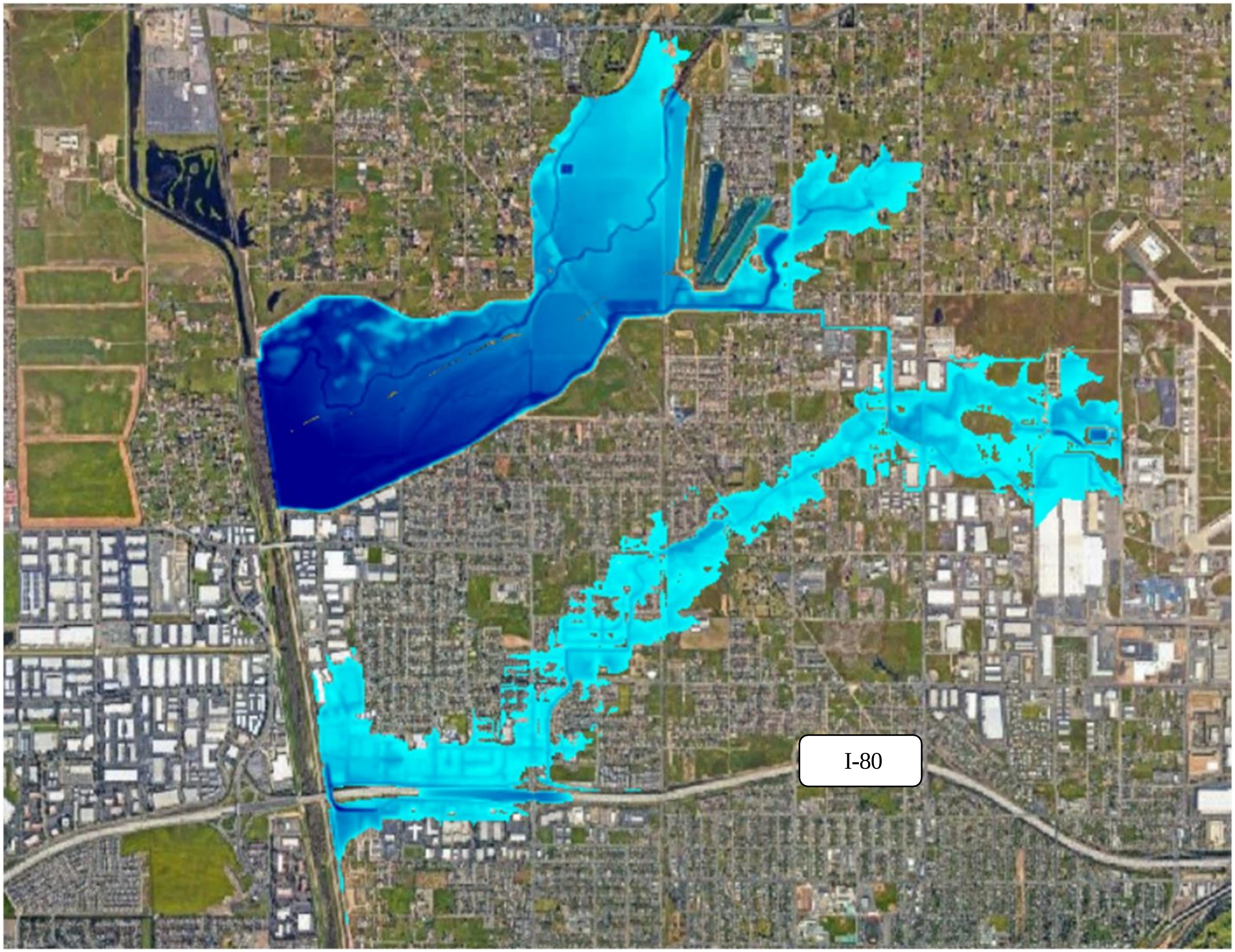

Figure 4-8: Pre-Project Conditions 0.2% (500 year) AEP Event Inundation

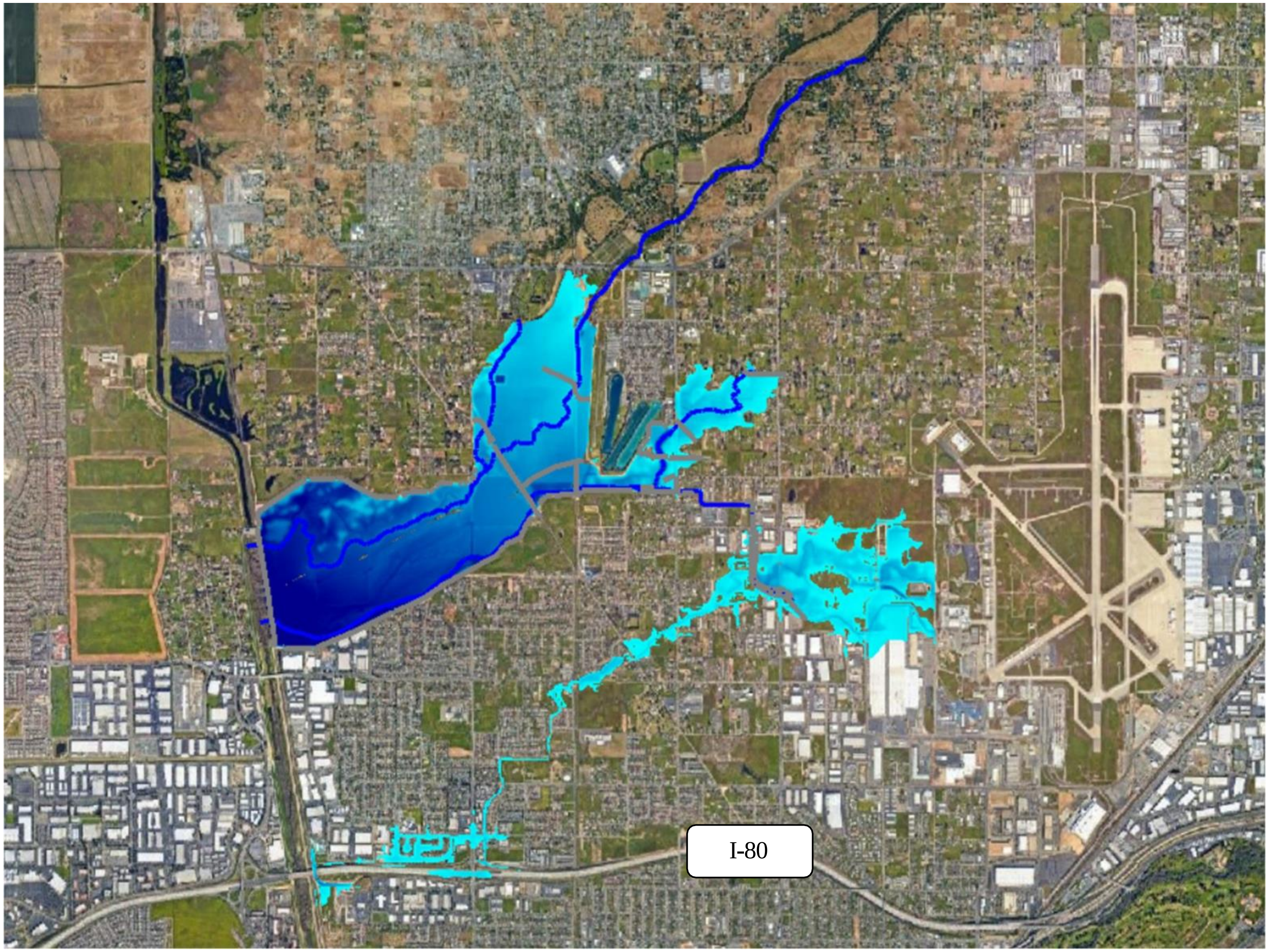

Figure 4-9: Post-Project Conditions 0.2% (500 year) AEP Event Inundation

5.0 MODEL RESULTS

Pre-Project and Post-Project models were executed for the 50%-, 10%-, 4%-, 2%-, 1%-, 0.5%-, and 0.2% AEP events. The model results for each event are shown in the Water Surface Elevation (WSE) / Design Water Surface Elevation (DWSE) tables (Table 5-1 through Table 5-7) below. Results are shown from upstream to downstream, from Magpie Creek Canal at Raley Boulevard to Robla Creek at its junction with the NEMDC (indicated in blue). Results from river reaches that were previously excluded from the original model, which include Robla upper and Dry Creek, are included at the bottom of the chart (indicated in green).

Table 5-1: Summary of 50% (2-YR) AEP Water Surface Elevations

River Station	Pre-Project Conditions	Post Project Conditions	Difference
	WSE (ft NAVD88)	*DWSE (ft NAVD88)*	*(ft NAVD88)*
Magpie Canal to NEMDC			
Magpie Creek – Magpie Creek			
1.22	Did not exist in pre-project	47.05	---
1.19	Did not exist in pre-project	47.06	---
1.17	Did not exist in pre-project	47.07	---
1.15	48.33	47.07	-1.26
1.14	48.33	47.07	-1.26
1.139		**Culvert**	
1.13	48.32	46.98	-1.34
1.117	48.32	46.98	-1.34
1.082	48.32	46.95	-1.37
1.048	48.32	46.91	-1.41
1.014	48.31	46.88	-1.43
0.907	47.34	46.40	-0.94
0.812	46.31	46.20	-0.11
0.750	45.92	45.65	-0.27
0.746		**Bridge – Vinci Ave.**	
0.743	45.79	43.79	-2.00
0.714	45.52	43.79	-1.73
0.645	45.07	43.58	-1.49
0.620	44.84	43.50	-1.34
0.503	44.01	43.18	-0.83
0.410	43.57	42.97	-0.60
0.354	43.17	42.86	-0.31
0.29	42.71	42.75	0.04
0.235	42.27	42.62	0.35
0.214	41.97	42.22	0.25
0.210		**Bridge – Dry Creek Rd.**	
0.206	41.85	42.19	0.34
0.185	41.80	42.12	0.32
0.164	41.72	42.01	0.29
0.143	41.68	41.96	0.28
0.107	41.54	41.83	0.29
0.089	41.48	41.75	0.27
0.070	41.45	41.75	0.30
0.052	41.44	41.72	0.28
0.035	41.40	41.65	0.25
Junction with Robla Creek – Magpie to NEMDC			
2.160	41.40	41.65	0.15
2.105	41.29	41.52	0.23
2.025	40.89	41.04	0.15
1.988	40.66	40.76	0.10
1.930	40.21	40.14	-0.07

1.860	39.74	39.64	-0.10
1.859	39.67	39.56	-0.11
1.857	**Bridge – Bike Trail**		
1.855	39.56	39.40	-0.16
1.854	39.56	39.41	-0.15
1.815	39.46	39.32	-0.14
1.750	39.22	39.07	-0.15
1.655	38.89	38.75	-0.14
1.599	38.61	38.48	-0.13
1.598	38.64	38.51	-0.13
1.593	**Bridge – Rio Linda Blvd.**		
1.584	38.53	38.41	-0.12
1.583	38.41	38.31	-0.1
1.530	38.22	38.12	-0.1
1.472	37.80	37.72	-0.08
1.372	37.07	36.99	-0.08
1.248	36.27	36.20	-0.07
1.132	35.37	35.30	-0.07
1.030	34.59	34.51	-0.08
0.917 ARN-G	33.92	33.84	-0.08
0.801	33.33	33.26	-0.07
0.704	32.82	32.76	-0.06
0.604	32.32	32.29	-0.03
0.501	31.98	31.96	-0.02
0.402	31.82	31.81	-0.01
0.317	31.77	31.76	-0.01
0.244	31.75	31.74	-0.01
0.193	31.74	31.73	-0.01
0.142	31.73	31.72	-0.01
0.067	31.59	31.58	-0.01
0.056	31.54	31.54	0
0.051	**Bridge -- RR**		
0.047	31.39	31.40	0.01
0.046	31.41	31.41	0
Junction with NEMDC			
Added Reaches to the Model			
Robla Creek -- Upper			
3.251	46.89	46.89	0
3.217	46.73	46.73	0
3.210	**Bridge – E. Street**		
3.204	46.66	46.65	-0.01
3.149	46.29	46.28	-0.01
3.047	44.96	44.97	0.01
2.945	43.60	43.63	0.03
2.836	42.83	42.92	0.09
2.747	42.08	42.27	0.19
2.654	41.57	41.82	0.25

2.626	**Culvert – Dry Creek Rd.**		
2.600	41.54	41.79	0.25
2.540	41.50	41.76	0.26
2.4955	41.50	41.75	0.25
2.451	41.49	41.75	0.26
2.423	41.48	41.74	0.26
2.420	**Bridge**		
2.417	41.47	41.73	0.26
2.4005	41.47	41.73	0.26
2.384	41.47	41.73	0.26
2.301	41.44	41.71	0.27
2.2673	41.43	41.70	0.27
2.200	41.40	41.65	0.25
Dry Creek – Left Branch			
2.82	47.73	47.73	0
2.819	47.68	47.68	0
2.804	47.35	47.35	0
2.789	47.03	47.03	0
2.774	46.94	46.94	0
2.758	46.86	46.86	0
2.743	46.79	46.79	0
2.727	46.75	46.75	0
2.711	46.69	46.69	0
2.695	46.62	46.62	0
2.679	46.54	46.54	0
2.663	46.41	46.41	0
2.561	45.51	45.51	0
2.467	44.10	44.10	0
2.45	43.72	43.72	0
2.449	43.71	43.71	0
2.448	**Bridge**		
2.445	43.67	43.67	0
2.444	43.67	43.67	0
2.421	43.42	43.42	0
2.357	42.26	42.26	0
2.266	40.84	40.84	0
2.181	40.25	40.24	-0.01
2.072	39.38	39.35	-0.03
1.954	39.01	38.95	-0.06
1.857	38.91	38.87	-0.04
1.833	38.75	38.71	-0.04
1.832	38.75	38.71	-0.04
1.824	38.55	38.50	-0.05
1.823	38.55	38.50	-0.05
1.8	38.33	38.28	-0.05
1.749	37.80	37.75	-0.05
1.748	37.80	37.75	-0.05
Dry Creek – Rt Branch Down			

0.824	42.93	42.93	0
0.823	42.89	42.89	0
0.73	42.19	42.19	0
0.639	41.86	41.86	0
0.544	41.36	41.36	0
0.446	40.78	40.78	0
0.367	40.33	40.33	0
0.284	39.92	39.91	-0.01
0.253	39.78	39.77	-0.01
0.252	39.78	39.77	-0.01
0.248		**Bridge**	
0.244	39.52	39.51	-0.01
0.243	39.52	39.51	-0.01
0.229	39.41	39.41	0
0.161	38.84	38.82	-0.02
0.131	38.57	38.54	-0.03
0.04	37.80	37.75	-0.05
0.039	37.80	37.75	-0.05
	Dry Creek – Lower		
1.695	37.80	37.75	-0.05
1.612	37.49	37.42	-0.07
1.503	36.69	36.63	-0.06
1.389	35.98	35.94	-0.04
1.264	35.33	35.29	-0.04
1.207	34.96	34.93	-0.03
1.203	34.93	34.90	-0.03
1.153	34.72	34.68	-0.04
1.06	34.17	34.13	-0.04
0.955 ARN-H	33.46	33.42	-0.04
0.851	32.60	32.58	-0.02
0.743	32.22	32.20	-0.02
0.7242	32.19	32.17	-0.02
0.7054	32.15	32.13	-0.02
0.6866	32.09	32.07	-0.02
0.6678	32.04	32.03	-0.01
0.649	32.01	32.00	-0.01
0.59714	31.98	31.96	-0.02
0.57985	31.94	31.93	-0.01
0.528	31.92	31.90	-0.02
0.409	31.88	31.87	-0.01
0.323	31.85	31.83	-0.02
10.266	31.80	31.79	-0.01
0.2175	31.77	31.76	-0.01
0.169	31.76	31.75	-0.01
0.1215	31.74	31.73	-0.01
0.074	31.70	31.69	-0.01
0.064	31.68	31.67	-0.01

0.059	**Bridge -- UPRR**		
0.054	31.59	31.59	0
0.053	31.60	31.60	0

Table 5-2: Summary of 10% (10-YR) AEP Water Surface Elevations

River Station	Pre-Project Conditions	Post Project Conditions	Difference
	WSE (ft NAVD88)	*DWSE (ft NAVD88)*	*(ft NAVD88)*
Magpie Canal to NEMDC			
Magpie Creek – Magpie Creek			
1.22	Did not exist in pre-project	48.05	---
1.19	Did not exist in pre-project	48.07	---
1.17	Did not exist in pre-project	48.08	---
1.15	49.11	48.08	-1.03
1.14	49.12	48.08	-1.04
1.139	**Culvert**		
1.13	49.11	47.98	-1.13
1.117	49.11	47.98	-1.13
1.082	49.11	47.95	-1.16
1.048	49.11	47.92	-1.19
1.014	49.10	47.91	-1.19
0.907	48.34	47.35	-0.99
0.812	47.45	47.14	-0.31
0.750	47.09	46.56	-0.51
0.746	**Bridge – Vinci Ave.**		
0.743	46.94	44.76	-0.18
0.714	46.67	44.79	-1.88
0.645	46.21	44.58	-1.63
0.620	45.98	44.51	-1.47
0.503	45.16	44.18	-0.98
0.410	44.70	43.96	-0.74
0.354	44.29	43.84	-0.45
0.29	43.83	43.72	-0.11
0.235	43.38	43.59	0.21
0.214	43.09	43.17	0.08
0.210	**Bridge – Dry Creek Rd.**		
0.206	42.98	43.14	0.16
0.185	42.95	43.10	0.15
0.164	42.90	43.02	0.12
0.143	42.88	42.99	0.11
0.107	42.77	42.88	0.11
0.089	42.72	42.82	0.10
0.070	42.70	42.81	0.11
0.052	42.68	42.79	0.11
0.035	42.65	42.72	0.07
Junction with Robla Creek – Magpie to NEMDC			
2.160	42.65	42.72	0.07
2.105	42.57	42.61	0.04
2.025	42.27	42.23	-0.04
1.988	42.14	42.06	-0.08
1.930	41.96	41.83	-0.13
1.860	41.70	41.67	-0.03
1.859	41.60	41.62	0.02

1.857	**Bridge – Bike Trail**		
1.855	41.50	41.52	0.02
1.854	41.52	41.53	0.01
1.815	41.45	41.47	0.02
1.750	41.32	41.34	0.02
1.655	41.04	41.06	0.02
1.599	40.54	40.55	0.01
1.598	40.59	40.61	0.02
1.593	**Bridge – Rio Linda Blvd.**		
1.584	40.29	40.30	0.01
1.583	40.01	40.02	0.01
1.530	39.72	39.73	0.01
1.472	39.25	39.26	0.01
1.372	38.53	38.53	0
1.248	37.71	37.70	-0.01
1.132	37.04	37.02	-0.02
1.030	36.65	36.63	-0.02
0.917 ARN-G	36.45	36.43	-0.02
0.801	36.34	36.32	-0.02
0.704	36.27	36.25	-0.02
0.604	36.22	36.20	-0.02
0.501	36.19	36.16	-0.03
0.402	36.17	36.15	-0.02
0.317	36.16	36.14	-0.02
0.244	36.15	36.13	-0.02
0.193	36.15	36.12	-0.03
0.142	36.13	36.11	-0.02
0.067	35.93	35.92	-0.01
0.056	35.89	35.87	-0.02
0.051	**Bridge -- RR**		
0.047	35.31	35.31	0
0.046	35.34	35.34	0
Junction with NEMDC			
Added Reaches to the Model			
Robla Creek -- Upper			
3.251	47.78	47.78	0
3.217	47.50	47.50	0
3.210	**Bridge – E. Street**		
3.204	47.29	47.29	0
3.149	46.77	46.77	0
3.047	45.72	45.72	0
2.945	44.63	44.65	0.02
2.836	43.95	43.98	0.03
2.747	43.34	43.41	0.07
2.654	42.89	42.98	0.09
2.626	**Culvert – Dry Creek Rd.**		
2.600	42.84	42.93	0.09
2.540	42.79	42.88	0.09

2.4955	42.78	42.87	0.09
2.451	42.77	42.86	0.09
2.423	42.75	42.84	0.09
2.420	**Bridge**		
2.417	42.72	42.80	0.08
2.4005	42.72	42.80	0.08
2.384	42.71	42.80	0.09
2.301	42.69	42.78	0.09
2.2673	42.68	42.77	0.09
2.200	42.65	42.72	0.07
Dry Creek – Left Branch			
2.82	49.54	49.54	0
2.819	49.43	49.43	0
2.804	48.96	48.96	0
2.789	48.49	48.49	0
2.774	48.38	48.38	0
2.758	48.26	48.26	0
2.743	48.17	48.17	0
2.727	48.10	48.10	0
2.711	48.02	48.02	0
2.695	47.94	47.94	0
2.679	47.84	47.84	0
2.663	47.70	47.70	0
2.561	46.67	46.67	0
2.467	45.24	45.24	0
2.45	44.85	44.85	0
2.449	44.85	44.85	0
2.448	**Bridge**		
2.445	44.81	44.81	0
2.444	44.81	44.81	0
2.421	44.57	44.57	0
2.357	43.64	43.64	0
2.266	42.17	42.18	0.01
2.181	41.76	41.77	0.01
2.072	41.42	41.43	0.01
1.954	41.36	41.37	0.01
1.857	41.21	41.23	0.02
1.833	40.91	40.93	0.02
1.832	40.91	40.92	0.01
1.824	40.58	40.59	0.01
1.823	40.58	40.59	0.01
1.8	40.33	40.34	0.01
1.749	39.24	39.25	0.01
1.748	39.24	39.25	0.01
Dry Creek – Rt Branch Down			
0.824	43.81	43.81	0
0.823	43.75	43.75	0
0.73	42.70	42.70	0
0.639	42.34	42.34	0

0.544	41.99	42.00	0.01
0.446	41.69	41.69	0
0.367	41.51	41.52	0.01
0.284	41.43	41.44	0.01
0.253	41.26	41.27	0.01
0.252	41.26	41.27	0.01
0.248		**Bridge**	
0.244	40.96	40.96	0
0.243	40.95	40.96	0.01
0.229	40.82	40.82	0
0.161	40.27	40.28	0.01
0.131	39.99	40.01	0.02
0.04	39.24	39.25	0.01
0.039	39.24	39.25	0.01
	Dry Creek – Lower		
1.695	39.24	39.25	0.01
1.612	39.00	39.01	0.01
1.503	38.08	38.08	0
1.389	37.21	37.18	-0.03
1.264	36.74	36.72	-0.02
1.207	36.60	36.58	-0.02
1.203	36.60	36.57	-0.03
1.153	36.53	36.50	-0.03
1.06	36.39	36.36	-0.03
0.955 ARN-H	36.27	36.25	-0.02
0.851	36.21	36.19	-0.02
0.743	36.19	36.17	-0.02
0.7242	36.19	36.17	-0.02
0.7054	36.19	36.17	-0.02
0.6866	36.19	36.17	-0.02
0.6678	36.19	36.17	-0.02
0.649	36.19	36.17	-0.02
0.59714	36.19	36.16	-0.03
0.57985	36.19	36.16	-0.03
0.528	36.18	36.16	-0.02
0.409	36.18	36.16	-0.02
0.323	36.18	36.16	-0.02
10.266	36.18	36.16	-0.02
0.2175	36.18	36.15	-0.03
0.169	36.17	36.15	-0.02
0.1215	36.16	36.14	-0.02
0.074	36.13	36.11	-0.02
0.064	36.06	36.05	-0.01
0.059		**Bridge -- UPRR**	
0.054	35.49	35.49	0
0.053	35.51	35.51	0

Table 5-3: Summary of 4% (25-YR) AEP Water Surface Elevations

River Station	Pre-Project Conditions	Post Project Conditions	Difference
	WSE (ft NAVD88)	*DWSE (ft NAVD88)*	*(ft NAVD88)*
Magpie Canal to NEMDC			
Magpie Creek – Magpie Creek			
1.22	Did not exist in pre-project	48.75	---
1.19	Did not exist in pre-project	48.77	---
1.17	Did not exist in pre-project	48.77	---
1.15	49.52	48.77	-0.75
1.14	49.52	48.77	-0.75
1.139		**Culvert**	
1.13	49.52	48.68	-0.84
1.117	49.52	48.68	-0.84
1.082	49.52	48.66	-0.86
1.048	49.52	48.64	-0.88
1.014	49.52	48.63	-0.89
0.907	48.95	48.11	-0.84
0.812	48.09	47.91	-0.18
0.750	47.73	47.41	-0.32
0.746		**Bridge – Vinci Ave.**	
0.743	47.57	45.73	-1.84
0.714	47.30	45.77	-1.53
0.645	46.83	45.61	-1.22
0.620	46.60	45.55	-1.05
0.503	45.76	45.29	-0.47
0.410	45.28	45.12	-0.16
0.354	44.93	45.02	0.09
0.29	44.55	44.92	0.37
0.235	44.18	44.81	0.63
0.214	43.96	44.48	0.52
0.210		**Bridge – Dry Creek Rd.**	
0.206	43.60	43.74	0.14
0.185	43.59	43.72	0.13
0.164	43.55	43.66	0.11
0.143	43.55	43.65	0.10
0.107	43.46	43.55	0.09
0.089	43.41	43.50	0.09
0.070	43.39	43.49	0.10
0.052	43.38	43.47	0.09
0.035	43.34	43.41	0.07
Junction with Robla Creek – Magpie to NEMDC			
2.160	43.34	43.41	0.07
2.105	43.28	43.34	0.06
2.025	43.06	43.06	0
1.988	42.96	42.94	-0.02
1.930	42.85	42.80	-0.05
1.860	42.61	42.62	0.01

1.859	42.52	42.58	0.06
1.857	**Bridge – Bike Trail**		
1.855	42.44	42.49	0.05
1.854	42.44	42.47	0.03
1.815	42.37	42.41	0.04
1.750	42.28	42.32	0.04
1.655	42.00	42.04	0.04
1.599	41.46	41.50	0.04
1.598	41.50	41.54	0.04
1.593	**Bridge – Rio Linda Blvd.**		
1.584	41.11	41.14	0.03
1.583	40.78	40.81	0.03
1.530	40.48	40.50	0.02
1.472	40.03	40.05	0.02
1.372	39.41	39.44	0.03
1.248	38.86	38.88	0.02
1.132	38.53	38.53	0
1.030	38.34	38.34	0
0.917 ARN-G	38.23	38.24	0.01
0.801	38.17	38.17	0
0.704	38.12	38.13	0.01
0.604	38.09	38.09	0
0.501	38.07	38.07	0
0.402	38.05	38.05	0
0.317	38.04	38.04	0
0.244	38.04	38.04	0
0.193	38.03	38.03	0
0.142	38.02	38.02	0
0.067	37.92	37.92	0
0.056	37.89	37.89	0
0.051	**Bridge -- RR**		
0.047	37.72	37.72	0
0.046	37.73	37.73	0
Junction with NEMDC			
Added Reaches to the Model			
Robla Creek -- Upper			
3.251	48.08	48.07	-0.01
3.217	47.72	47.71	-0.01
3.210	**Bridge – E. Street**		
3.204	47.59	47.59	0
3.149	46.98	46.98	0
3.047	45.99	45.99	0
2.945	45.03	45.04	0.01
2.836	44.41	44.44	0.03
2.747	43.97	44.04	0.07
2.654	43.61	43.70	0.09
2.626	**Culvert – Dry Creek Rd.**		
2.600	43.54	43.62	0.08

2.540	43.49	43.57	0.08
2.4955	43.48	43.56	0.08
2.451	43.47	43.55	0.08
2.423	43.45	43.52	0.07
2.420	**Bridge**		
2.417	43.40	43.48	0.08
2.4005	43.40	43.48	0.08
2.384	43.40	43.48	0.08
2.301	43.38	43.46	0.08
2.2673	43.37	43.45	0.08
2.200	43.34	43.41	0.07
Dry Creek – Left Branch			
2.82	50.34	50.34	0
2.819	50.20	50.20	0
2.804	49.65	49.65	0
2.789	49.09	49.09	0
2.774	48.93	48.93	0
2.758	48.78	48.78	0
2.743	48.66	48.66	0
2.727	48.58	48.58	0
2.711	48.47	48.47	0
2.695	48.37	48.37	0
2.679	48.26	48.26	0
2.663	48.11	48.11	0
2.561	47.03	47.03	0
2.467	45.53	45.53	0
2.45	45.11	45.11	0
2.449	45.11	45.11	0
2.448	**Bridge**		
2.445	45.06	45.06	0
2.444	45.06	45.06	0
2.421	44.80	44.80	0
2.357	43.94	43.95	0.01
2.266	42.87	42.90	0.03
2.181	42.60	42.64	0.04
2.072	42.48	42.52	0.04
1.954	42.45	42.49	0.04
1.857	42.34	42.38	0.04
1.833	41.99	42.03	0.04
1.832	41.99	42.03	0.04
1.824	41.49	41.52	0.03
1.823	41.49	41.51	0.02
1.8	41.29	41.32	0.03
1.749	40.06	40.08	0.02
1.748	40.05	40.07	0.02
Dry Creek – Rt Branch Down			
0.824	44.33	44.33	0
0.823	44.23	44.23	0
0.73	42.99	43.00	0.01

0.639	42.68	42.71	0.03
0.544	42.60	42.63	0.03
0.446	42.59	42.62	0.03
0.367	42.59	42.62	0.03
0.284	42.58	42.61	0.03
0.253	42.27	42.30	0.03
0.252	42.27	42.30	0.03
0.248	**Bridge**		
0.244	41.94	41.97	0.03
0.243	41.94	41.97	0.03
0.229	41.67	41.70	0.03
0.161	41.20	41.24	0.04
0.131	40.92	40.96	0.04
0.04	40.05	40.08	0.03
0.039	40.05	40.07	0.02
Dry Creek – Lower			
1.695	40.05	40.07	0.02
1.612	39.82	39.85	0.03
1.503	39.14	39.16	0.02
1.389	38.60	38.61	0.01
1.264	38.36	38.36	0
1.207	38.29	38.30	0.01
1.203	38.29	38.29	0
1.153	38.24	38.25	0.01
1.06	38.17	38.17	0
0.955 ARN-H	38.11	38.11	0
0.851	38.07	38.07	0
0.743	38.06	38.06	0
0.7242	38.06	38.06	0
0.7054	38.06	38.06	0
0.6866	38.05	38.06	0.01
0.6678	38.05	38.06	0.01
0.649	38.05	38.05	0
0.59714	38.05	38.05	0
0.57985	38.05	38.05	0
0.528	38.05	38.05	0
0.409	38.05	38.05	0
0.323	38.05	38.05	0
10.266	38.04	38.05	0.01
0.2175	38.04	38.04	0
0.169	38.04	38.04	0
0.1215	38.03	38.03	0
0.074	38.01	38.01	0
0.064	37.99	37.99	0
0.059	**Bridge -- UPRR**		
0.054	37.94	37.94	0
0.053	37.94	37.94	0

Table 5-4: Summary of 2% (50-YR) AEP Water Surface Elevations

River Station	Pre-Project Conditions	Post Project Conditions	Difference
	WSE (ft NAVD88)	*DWSE (ft NAVD88)*	*(ft NAVD88)*
Magpie Canal to NEMDC			
Magpie Creek – Magpie Creek			
1.22	Did not exist in pre-project	49.28	---
1.19	Did not exist in pre-project	49.29	---
1.17	Did not exist in pre-project	49.29	---
1.15	49.74	49.29	-0.45
1.14	49.74	49.29	-0.45
1.139	**Culvert**		
1.13	49.74	49.16	-0.58
1.117	49.73	49.16	-0.57
1.082	49.73	49.15	-0.58
1.048	49.74	49.13	-0.61
1.014	49.74	49.12	-0.62
0.907	49.22	48.63	-0.59
0.812	48.39	48.37	-0.02
0.750	48.05	47.83	-0.22
0.746	**Bridge – Vinci Ave.**		
0.743	47.89	46.11	-1.78
0.714	47.63	46.18	-1.45
0.645	47.19	45.99	-1.2
0.620	46.99	45.93	-1.06
0.503	46.26	45.63	-0.63
0.410	45.83	45.42	-0.41
0.354	45.48	45.31	-0.17
0.29	45.09	45.20	0.11
0.235	44.71	45.07	0.36
0.214	44.47	44.70	0.23
0.210	**Bridge – Dry Creek Rd.**		
0.206	44.08	44.26	0.18
0.185	44.07	44.25	0.18
0.164	44.05	44.20	0.15
0.143	44.05	44.20	0.15
0.107	43.97	44.11	0.14
0.089	43.93	44.05	0.12
0.070	43.91	44.05	0.14
0.052	43.90	44.03	0.13
0.035	43.87	43.96	0.09
Junction with Robla Creek – Magpie to NEMDC			
2.160	43.87	43.96	0.09
2.105	43.81	43.89	0.08
2.025	43.63	43.65	0.02
1.988	43.55	43.55	0
1.930	43.46	43.44	-0.02
1.860	43.31	43.31	0
1.859	43.26	43.27	0.01

1.857	**Bridge – Bike Trail**		
1.855	43.18	43.24	0.06
1.854	43.18	43.25	0.07
1.815	43.13	43.21	0.08
1.750	43.06	43.13	0.07
1.655	42.76	42.82	0.06
1.599	42.21	42.27	0.06
1.598	42.25	42.31	0.06
1.593	**Bridge – Rio Linda Blvd.**		
1.584	41.81	41.86	0.05
1.583	41.43	41.47	0.04
1.530	41.14	41.18	0.04
1.472	40.76	40.79	0.03
1.372	40.31	40.33	0.02
1.248	39.95	39.96	0.01
1.132	39.74	39.75	0.01
1.030	39.63	39.63	0
0.917 ARN-G	39.55	39.56	0.01
0.801	39.51	39.51	0
0.704	39.47	39.48	0.01
0.604	39.45	39.45	0
0.501	39.42	39.43	0.01
0.402	39.41	39.41	0
0.317	39.40	39.40	0
0.244	39.40	39.40	0
0.193	39.39	39.39	0
0.142	39.38	39.38	0
0.067	39.31	39.31	0
0.056	39.29	39.29	0
0.051	**Bridge -- RR**		
0.047	39.20	39.20	0
0.046	39.20	39.20	0
Junction with NEMDC			
Added Reaches to the Model			
Robla Creek -- Upper			
3.251	48.29	48.29	0
3.217	47.86	47.85	-0.01
3.210	**Bridge – E. Street**		
3.204	47.82	47.82	0
3.149	47.15	47.15	0
3.047	46.19	46.19	0
2.945	45.32	45.36	0.04
2.836	44.78	44.87	0.09
2.747	44.48	44.60	0.12
2.654	44.19	44.32	0.13
2.626	**Culvert – Dry Creek Rd.**		
2.600	44.07	44.18	0.11
2.540	44.02	44.13	0.11

2.4955	44.01	44.12	0.11
2.451	44.00	44.12	0.12
2.423	43.97	44.09	0.12
2.420	**Bridge**		
2.417	43.92	44.02	0.10
2.4005	43.92	44.03	0.11
2.384	43.92	44.03	0.11
2.301	43.90	44.01	0.11
2.2673	43.89	44.00	0.11
2.200	43.87	43.96	0.09
Dry Creek – Left Branch			
2.82	50.93	50.93	0
2.819	50.76	50.76	0
2.804	50.17	50.17	0
2.789	49.54	49.54	0
2.774	49.36	49.36	0
2.758	49.18	49.18	0
2.743	49.03	49.03	0
2.727	48.93	48.93	0
2.711	48.82	48.82	0
2.695	48.70	48.70	0
2.679	48.58	48.58	0
2.663	48.42	48.42	0
2.561	47.30	47.30	0
2.467	45.75	45.75	0
2.45	45.31	45.31	0
2.449	45.31	45.31	0
2.448	**Bridge**		
2.445	45.26	45.26	0
2.444	45.25	45.26	0.01
2.421	44.98	44.98	0
2.357	44.23	44.25	0.02
2.266	43.54	43.60	0.06
2.181	43.41	43.47	0.06
2.072	43.33	43.39	0.06
1.954	43.30	43.36	0.06
1.857	43.20	43.26	0.06
1.833	42.83	42.89	0.06
1.832	42.82	42.89	0.07
1.824	42.17	42.21	0.04
1.823	42.16	42.20	0.04
1.8	42.01	42.05	0.04
1.749	40.80	40.83	0.03
1.748	40.79	40.82	0.03
Dry Creek – Rt Branch Down			
0.824	44.75	44.76	0.01
0.823	44.60	44.62	0.02
0.73	43.55	43.59	0.04
0.639	43.47	43.53	0.06

0.544	43.46	43.51	0.05
0.446	43.45	43.51	0.06
0.367	43.44	43.50	0.06
0.284	43.44	43.50	0.06
0.253	43.10	43.15	0.05
0.252	43.10	43.15	0.05
0.248		**Bridge**	
0.244	42.43	42.45	0.02
0.243	42.43	42.45	0.02
0.229	42.24	42.28	0.04
0.161	41.79	41.83	0.04
0.131	41.54	41.57	0.03
0.04	40.79	40.82	0.03
0.039	40.79	40.82	0.03
	Dry Creek – Lower		
1.695	40.79	40.82	0.03
1.612	40.60	40.63	0.03
1.503	40.14	40.16	0.02
1.389	39.79	49.80	0.01
1.264	39.64	39.64	0
1.207	39.59	39.60	0.01
1.203	39.59	39.59	0
1.153	39.56	39.56	0
1.06	39.50	39.51	0.01
0.955 **ARN-H**	39.46	39.47	0.01
0.851	39.44	39.44	0
0.743	39.43	39.43	0
0.7242	39.43	39.43	0
0.7054	39.43	39.43	0
0.6866	39.43	39.43	0
0.6678	39.43	39.43	0
0.649	39.43	39.43	0
0.59714	39.43	39.43	0
0.57985	39.43	39.43	0
0.528	39.43	39.43	0
0.409	39.42	39.43	0.01
0.323	39.42	39.42	0
10.266	39.42	39.42	0
0.2175	39.42	39.42	0
0.169	39.41	39.42	0.01
0.1215	39.41	39.41	0
0.074	39.40	39.40	0
0.064	39.39	39.39	0
0.059		**Bridge -- UPRR**	
0.054	39.37	39.37	0
0.053	39.37	39.37	0

Table 5-5: Summary of 1% (100-YR) AEP Water Surface Elevations

River Station	Pre-Project Conditions	Post Project Conditions	Difference
	WSE (ft NAVD88)	*DWSE (ft NAVD88)*	*(ft NAVD88)*
Magpie Canal to NEMDC			
Magpie Creek – Magpie Creek			
1.22	Did not exist in pre-project	49.71	---
1.19	Did not exist in pre-project	49.72	---
1.17	Did not exist in pre-project	49.72	---
1.15	49.91	49.72	-0.19
1.14	49.91	49.73	-0.18
1.139	**Culvert**		
1.13	49.90	49.61	-0.29
1.117	49.89	49.61	-0.28
1.082	49.89	49.60	-0.29
1.048	49.90	49.59	-0.31
1.014	49.90	49.58	-0.32
0.907	49.40	49.18	-0.22
0.812	48.62	48.86	0.24
0.750	48.28	48.31	0.03
0.746	**Bridge – Vinci Ave.**		
0.743	48.12	46.59	-1.53
0.714	47.86	46.67	-1.19
0.645	47.42	46.49	-0.93
0.620	47.21	46.42	-0.79
0.503	46.45	46.11	-0.34
0.410	46.00	45.91	-0.09
0.354	45.63	45.80	0.17
0.29	45.27	45.69	0.42
0.235	44.97	45.56	0.59
0.214	44.80	45.23	0.43
0.210	**Bridge – Dry Creek Rd.**		
0.206	44.56	44.79	0.23
0.185	44.56	44.80	0.24
0.164	44.56	44.78	0.22
0.143	44.57	44.79	0.22
0.107	44.51	44.72	0.21
0.089	44.47	44.67	0.20
0.070	44.45	44.67	0.22
0.052	44.44	44.65	0.21
0.035	44.42	44.60	0.18
Junction with Robla Creek – Magpie to NEMDC			
2.160	44.42	44.60	0.18
2.105	44.37	44.53	0.16
2.025	44.21	44.32	0.11
1.988	44.15	44.23	0.08
1.930	44.08	44.14	0.06
1.860	43.98	44.06	0.08

1.859	43.95	44.03	0.08
1.857	**Bridge – Bike Trail**		
1.855	43.92	44.00	0.08
1.854	43.92	44.00	0.8
1.815	43.88	43.97	0.09
1.750	43.81	43.89	0.08
1.655	43.50	43.57	0.07
1.599	42.96	43.02	0.06
1.598	43.00	43.06	0.06
1.593	**Bridge – Rio Linda Blvd.**		
1.584	42.53	42.58	0.05
1.583	42.25	42.30	0.05
1.530	42.03	42.07	0.04
1.472	41.76	41.79	0.03
1.372	41.47	41.49	0.02
1.248	41.25	41.27	0.02
1.132	41.13	41.14	0.01
1.030	41.05	41.06	0.01
0.917 ARN-G	41.00	41.01	0.01
0.801	40.96	40.97	0.01
0.704	40.94	40.94	0
0.604	40.91	40.92	0.01
0.501	40.89	40.90	0.01
0.402	40.88	40.88	0
0.317	40.87	40.88	0.01
0.244	40.87	40.87	0
0.193	40.86	40.87	0.01
0.142	40.85	40.86	0.01
0.067	40.80	40.80	0
0.056	40.78	40.78	0
0.051	**Bridge -- RR**		
0.047	40.73	40.73	0
0.046	40.72	40.72	0
Junction with NEMDC			
Added Reaches to the Model			
Robla Creek -- Upper			
3.251	48.46	48.47	0.01
3.217	47.97	47.99	0.02
3.210	**Bridge – E. Street**		
3.204	48.00	48.00	0
3.149	47.30	47.30	0
3.047	46.35	46.36	0.01
2.945	45.61	45.68	0.07
2.836	45.19	45.34	0.15
2.747	45.01	45.19	0.18
2.654	44.78	44.97	0.19
2.626	**Culvert – Dry Creek Rd.**		
2.600	44.63	44.81	0.18

2.540	44.58	44.76	0.18
2.4955	44.57	44.76	0.19
2.451	44.56	44.75	0.19
2.423	44.53	44.72	0.19
2.420	**Bridge**		
2.417	44.47	44.66	0.19
2.4005	44.47	44.66	0.19
2.384	44.47	44.66	0.19
2.301	44.45	44.63	0.18
2.2673	44.44	44.62	0.18
2.200	44.42	44.60	0.18
Dry Creek – Left Branch			
2.82	51.51	51.51	0
2.819	51.31	51.31	0
2.804	50.69	50.69	0
2.789	50.01	50.01	0
2.774	49.80	49.80	0
2.758	49.59	49.59	0
2.743	49.41	49.41	0
2.727	49.30	49.30	0
2.711	49.16	49.16	0
2.695	49.03	49.03	0
2.679	48.90	48.90	0
2.663	48.73	48.73	0
2.561	47.56	47.56	0
2.467	45.99	46.00	0.01
2.45	45.55	45.56	0.01
2.449	45.54	45.55	0.01
2.448	**Bridge**		
2.445	45.49	45.50	0.01
2.444	45.49	45.50	0.01
2.421	45.22	45.23	0.01
2.357	44.64	44.67	0.03
2.266	44.27	44.33	0.06
2.181	44.21	44.28	0.07
2.072	44.14	44.21	0.07
1.954	44.11	44.18	0.07
1.857	44.01	44.08	0.07
1.833	43.68	43.75	0.07
1.832	43.68	43.74	0.06
1.824	42.81	42.87	0.06
1.823	42.80	42.86	0.06
1.8	42.68	42.74	0.06
1.749	41.80	41.83	0.03
1.748	41.79	41.82	0.03
Dry Creek – Rt Branch Down			
0.824	45.30	45.33	0.03
0.823	45.14	45.17	0.03
0.73	44.32	44.38	0.06

0.639	44.30	44.36	0.06
0.544	44.28	44.35	0.07
0.446	44.27	44.34	0.07
0.367	44.27	44.33	0.06
0.284	44.26	44.32	0.06
0.253	44.04	44.13	0.09
0.252	44.04	44.12	0.08
0.248		**Bridge**	
0.244	42.94	42.98	0.04
0.243	42.93	42.98	0.05
0.229	42.92	42.98	0.06
0.161	42.65	42.72	0.07
0.131	42.40	42.46	0.06
0.04	41.79	41.82	0.03
0.039	41.79	41.82	0.03
Dry Creek – Lower			
1.695	41.79	41.82	0.03
1.612	41.66	41.69	0.03
1.503	41.38	41.40	0.02
1.389	41.16	41.17	0.01
1.264	41.06	41.07	0.01
1.207	41.02	41.03	0.01
1.203	41.02	41.03	0.01
1.153	41.00	41.01	0.01
1.06	40.97	40.97	0
0.955 ARN-H	40.94	40.94	0
0.851	40.92	40.92	0
0.743	40.91	40.91	0
0.7242	40.91	40.91	0
0.7054	40.91	40.91	0
0.6866	40.91	40.91	0
0.6678	40.91	40.91	0
0.649	40.91	40.91	0
0.59714	40.91	40.91	0
0.57985	40.91	40.91	0
0.528	40.91	40.91	0
0.409	40.91	40.91	0
0.323	40.91	40.91	0
10.266	40.90	40.91	0.01
0.2175	40.90	40.90	0
0.169	40.90	40.90	0
0.1215	40.90	40.90	0
0.074	40.89	40.89	0
0.064	40.89	40.89	0
0.059		**Bridge -- UPRR**	
0.054	40.88	40.88	0
0.053	40.88	40.88	0

Table 5-6: Summary of 0.5% (200-YR) AEP Design Event Water Surface Elevations

River Station	Pre-Project Conditions	Post Project Conditions	Difference
	WSE (ft NAVD88)	*DWSE (ft NAVD88)*	*(ft NAVD88)*
Magpie Canal to NEMDC			
Magpie Creek – Magpie Creek			
1.22	Did not exist in pre-project	50.14	---
1.19	Did not exist in pre-project	50.15	---
1.17	Did not exist in pre-project	50.15	---
1.15	50.06	50.15	0.09
1.14	50.06	50.15	0.09
1.139	**Culvert**		
1.13	50.05	50.06	0.01
1.117	50.03	50.06	0.03
1.082	50.03	50.05	0.02
1.048	50.04	50.04	0
1.014	50.05	50.04	-0.01
0.907	49.55	49.70	0.15
0.812	48.77	49.36	0.59
0.750	48.44	48.84	0.40
0.746	**Bridge – Vinci Ave.**		
0.743	48.27	46.86	-1.41
0.714	48.01	46.95	-1.06
0.645	47.56	46.77	-0.79
0.620	47.35	46.70	-0.65
0.503	46.58	46.39	-0.19
0.410	46.25	46.20	-0.05
0.354	45.99	46.09	0.1
0.29	45.72	45.99	0.27
0.235	45.46	45.87	0.41
0.214	45.32	45.52	0.20
0.210	**Bridge – Dry Creek Rd.**		
0.206	45.05	45.33	0.28
0.185	45.08	45.40	0.32
0.164	45.08	45.39	0.31
0.143	45.09	45.40	0.31
0.107	45.04	45.34	0.30
0.089	45.02	45.30	0.28
0.070	45.00	45.30	0.30
0.052	44.99	45.28	0.29
0.035	44.97	45.23	0.26
Junction with Robla Creek – Magpie to NEMDC			
2.160	44.97	45.23	0.26
2.105	44.93	45.17	0.24
2.025	44.80	44.98	0.18
1.988	44.74	44.90	0.16
1.930	44.69	44.82	0.13

1.860	44.62	44.75	0.13
1.859	44.61	44.73	0.12
1.857	**Bridge – Bike Trail**		
1.855	44.58	44.68	0.10
1.854	44.58	44.68	0.10
1.815	44.55	44.65	0.10
1.750	44.49	44.58	0.09
1.655	44.19	44.27	0.08
1.599	43.75	43.82	0.07
1.598	43.78	43.84	0.07
1.593	**Bridge – Rio Linda Blvd.**		
1.584	43.40	43.45	0.05
1.583	43.24	43.28	0.04
1.530	43.10	43.13	0.03
1.472	42.93	42.96	0.03
1.372	42.75	42.77	0.02
1.248	42.61	42.62	0.01
1.132	42.53	42.54	0.01
1.030	42.47	42.48	0.01
0.917 ARN-G	42.43	42.44	0.01
0.801	42.40	42.41	0.01
0.704	42.38	42.39	0.01
0.604	42.36	42.37	0.01
0.501	42.34	42.35	0.01
0.402	42.33	42.34	0.01
0.317	42.33	42.33	0
0.244	42.32	42.32	0
0.193	42.31	42.32	0.01
0.142	42.30	42.31	0.01
0.067	42.26	42.26	0
0.056	42.25	42.25	0
0.051	**Bridge -- RR**		
0.047	42.20	42.20	0
0.046	42.20	42.20	0
Junction with NEMDC			
Added Reaches to the Model			
Robla Creek -- Upper			
3.251	48.62	48.62	0
3.217	48.15	48.15	0
3.210	**Bridge – E. Street**		
3.204	48.15	48.15	0
3.149	47.43	47.43	0
3.047	46.52	46.55	0.03
2.945	45.95	46.10	0.15
2.836	45.70	45.90	0.20
2.747	45.58	45.80	0.22
2.654	45.37	45.63	0.26

2.626	**Culvert – Dry Creek Rd.**		
2.600	45.17	45.41	0.24
2.540	45.12	45.37	0.25
2.4955	45.12	45.37	0.25
2.451	45.11	45.36	0.25
2.423	45.07	45.33	0.26
2.420	**Bridge**		
2.417	45.03	45.30	0.27
2.4005	45.03	45.30	0.27
2.384	45.03	45.29	0.26
2.301	45.00	45.27	0.27
2.2673	44.99	45.26	0.27
2.200	44.97	45.23	0.26
Dry Creek – Left Branch			
2.82	52.11	52.11	0
2.819	51.87	51.87	0
2.804	51.22	51.22	0
2.789	50.49	50.49	0
2.774	50.25	50.25	0
2.758	50.01	50.01	0
2.743	49.81	49.81	0
2.727	49.68	49.68	0
2.711	49.52	49.52	0
2.695	49.37	49.37	0
2.679	49.23	49.23	0
2.663	49.04	49.04	0
2.561	47.83	47.83	0
2.467	46.27	46.29	0.02
2.45	45.85	45.88	0.03
2.449	45.84	45.87	0.03
2.448	**Bridge**		
2.445	45.79	45.82	0.03
2.444	45.79	45.82	0.03
2.421	45.55	45.59	0.04
2.357	45.14	45.20	0.06
2.266	44.93	45.01	0.08
2.181	44.90	44.98	0.08
2.072	44.84	44.91	0.07
1.954	44.81	44.89	0.08
1.857	44.71	44.79	0.08
1.833	44.44	44.52	0.08
1.832	44.44	44.52	0.08
1.824	43.85	43.93	0.08
1.823	43.85	43.93	0.08
1.8	43.75	43.82	0.07
1.749	43.03	43.06	0.03
1.748	43.03	43.06	0.03
Dry Creek – Rt Branch Down			

0.824	45.87	45.91	0.04
0.823	45.70	45.75	0.05
0.73	45.02	45.10	0.08
0.639	45.00	45.08	0.08
0.544	44.99	45.06	0.07
0.446	44.97	45.05	0.08
0.367	44.96	45.04	0.08
0.284	44.94	45.02	0.08
0.253	44.79	44.85	0.06
0.252	44.78	44.85	0.07
0.248	**Bridge**		
0.244	44.03	44.14	0.11
0.243	44.03	44.14	0.11
0.229	44.05	44.14	0.09
0.161	43.88	43.98	0.10
0.131	43.59	43.67	0.08
0.04	43.03	43.06	0.03
0.039	43.03	43.06	0.03
Dry Creek – Lower			
1.695	43.03	43.06	0.03
1.612	42.92	42.95	0.03
1.503	42.72	42.73	0.01
1.389	42.56	42.58	0.02
1.264	42.49	42.49	0
1.207	42.46	42.46	0
1.203	42.46	42.46	0
1.153	42.44	42.44	0
1.06	42.41	42.42	0.01
0.955 ARN-H	42.39	42.39	0
0.851	42.38	42.38	0
0.743	42.37	42.38	0.01
0.7242	42.37	42.38	0.01
0.7054	42.37	42.38	0.01
0.6866	42.37	42.37	0
0.6678	42.37	42.37	0
0.649	42.37	42.37	0
0.59714	42.37	42.37	0
0.57985	42.37	42.37	0
0.528	42.37	42.37	0
0.409	42.37	42.37	0
0.323	42.37	42.37	0
10.266	42.37	42.37	0
0.2175	42.37	42.37	0
0.169	42.36	42.36	0
0.1215	42.36	42.36	0
0.074	42.36	42.36	0
0.064	42.35	42.35	0

0.059	**Bridge -- UPRR**		
0.054	42.35	42.35	0
0.053	42.35	42.35	0

Table 5-7: Summary of 0.2% (500-YR) AEP Water Surface Elevations

River Station	Pre-Project Conditions	Post Project Conditions	Difference
	WSE (ft NAVD88)	*DWSE (ft NAVD88)*	*(ft NAVD88)*
Magpie Canal to NEMDC			
Magpie Creek – Magpie Creek			
1.22	Did not exist in pre-project	50.56	---
1.19	Did not exist in pre-project	50.56	---
1.17	Did not exist in pre-project	50.56	---
1.15	50.22	50.57	0.35
1.14	50.22	50.57	0.35
1.139	**Culvert**		
1.13	50.21	50.49	0.28
1.117	50.18	50.49	0.31
1.082	50.17	50.48	0.31
1.048	50.18	50.48	0.30
1.014	50.20	50.47	0.27
0.907	49.69	50.20	0.51
0.812	48.94	49.88	0.94
0.750	48.60	49.48	0.88
0.746	**Bridge – Vinci Ave.**		
0.743	48.44	47.08	-1.36
0.714	48.18	47.15	-1.03
0.645	47.74	47.01	-0.73
0.620	47.53	46.95	-0.58
0.503	46.94	46.72	-0.22
0.410	46.66	46.56	-0.10
0.354	46.44	46.48	0.04
0.29	46.22	46.39	0.17
0.235	46.01	46.29	0.28
0.214	45.96	46.12	0.16
0.210	**Bridge – Dry Creek Rd.**		
0.206	45.93	46.18	0.25
0.185	45.95	46.22	0.27
0.164	45.94	46.21	0.27
0.143	45.95	46.22	0.27
0.107	45.92	46.18	0.26
0.089	45.90	46.15	0.25
0.070	45.89	46.15	0.26
0.052	45.88	46.13	0.25
0.035	45.87	46.09	0.22
Junction with Robla Creek – Magpie to NEMDC			
2.160	45.87	46.09	0.22
2.105	45.84	46.05	0.21
2.025	45.74	45.91	0.17
1.988	45.71	45.86	0.15
1.930	45.67	45.80	0.13
1.860	45.63	45.77	0.14

1.859	45.63	45.76	0.13
1.857	**Bridge – Bike Trail**		
1.855	45.62	45.69	0.07
1.854	45.61	45.69	0.08
1.815	45.59	45.67	0.08
1.750	45.55	45.62	0.07
1.655	45.34	45.40	0.06
1.599	45.06	45.11	0.05
1.598	45.07	45.12	0.05
1.593	**Bridge – Rio Linda Blvd.**		
1.584	44.80	44.84	0.04
1.583	44.73	44.76	0.03
1.530	44.65	44.68	0.03
1.472	44.56	44.58	0.02
1.372	44.45	44.47	0.02
1.248	44.36	44.38	0.02
1.132	44.31	44.32	0.01
1.030	44.27	44.28	0.01
0.917 ARN-G	44.24	44.24	0
0.801	44.21	44.22	0.01
0.704	44.20	44.20	0
0.604	44.18	44.18	0
0.501	44.16	44.17	0.01
0.402	44.15	44.16	0.01
0.317	44.15	44.15	0
0.244	44.14	44.15	0.01
0.193	44.14	44.14	0
0.142	44.13	44.13	0
0.067	44.09	44.09	0
0.056	44.08	44.08	0
0.051	**Bridge -- RR**		
0.047	44.05	44.05	0
0.046	44.04	44.04	0
Junction with NEMDC			
Added Reaches to the Model			
Robla Creek -- Upper			
3.251	48.81	48.81	0
3.217	48.33	48.34	0.01
3.210	**Bridge – E. Street**		
3.204	48.34	48.34	0
3.149	47.59	47.59	0
3.047	46.85	46.91	0.06
2.945	46.55	46.66	0.11
2.836	46.41	46.54	0.13
2.747	46.34	46.47	0.13
2.654	46.20	46.34	0.14
2.626	**Culvert – Dry Creek Rd.**		

2.600	46.00	46.22	0.22
2.540	45.97	46.19	0.22
2.4955	45.96	46.19	0.23
2.451	45.96	46.18	0.22
2.423	45.93	46.16	0.23
2.420	**Bridge**		
2.417	45.91	46.14	0.23
2.4005	45.91	46.14	0.23
2.384	45.91	46.14	0.23
2.301	45.89	46.12	0.23
2.2673	45.88	46.11	0.23
2.200	45.87	46.09	0.22
Dry Creek – Left Branch			
2.82	52.86	52.86	0
2.819	52.58	52.58	0
2.804	51.90	51.90	0
2.789	51.11	51.11	0
2.774	50.84	50.84	0
2.758	50.56	50.56	0
2.743	50.32	50.32	0
2.727	50.17	50.17	0
2.711	49.99	49.99	0
2.695	49.82	49.82	0
2.679	49.65	49.65	0
2.663	49.45	49.45	0
2.561	48.18	48.19	0.01
2.467	46.78	46.81	0.03
2.45	46.46	46.50	0.04
2.449	46.45	46.49	0.04
2.448	**Bridge**		
2.445	46.42	46.46	0.04
2.444	46.41	46.45	0.04
2.421	46.29	46.33	0.04
2.357	46.06	46.11	0.05
2.266	45.95	46.01	0.06
2.181	45.93	45.99	0.06
2.072	45.87	45.93	0.06
1.954	45.85	45.91	0.06
1.857	45.78	45.83	0.05
1.833	45.65	45.70	0.05
1.832	45.65	45.70	0.05
1.824	45.43	45.48	0.05
1.823	45.43	45.48	0.05
1.8	45.32	45.37	0.05
1.749	44.73	44.75	0.02
1.748	44.72	44.75	0.03
Dry Creek – Rt Branch Down			
0.824	46.68	46.73	0.05

0.823	46.53	46.57	0.04
0.73	46.07	46.13	0.06
0.639	46.04	46.09	0.05
0.544	46.01	46.07	0.06
0.446	45.99	46.05	0.06
0.367	45.98	46.04	0.06
0.284	45.96	46.01	0.05
0.253	45.85	45.91	0.06
0.252	45.85	45.91	0.06
0.248		**Bridge**	
0.244	45.74	45.79	0.05
0.243	45.74	45.79	0.05
0.229	45.73	45.78	0.05
0.161	45.61	45.67	0.06
0.131	45.25	45.30	0.05
0.04	44.73	44.75	0.02
0.039	44.72	44.75	0.03
	Dry Creek – Lower		
1.695	44.72	44.75	0.03
1.612	44.63	44.66	0.03
1.503	44.47	44.49	0.02
1.389	44.36	44.37	0.01
1.264	44.30	44.30	0
1.207	44.27	44.28	0.01
1.203	44.27	44.28	0.01
1.153	44.26	44.26	0
1.06	44.24	44.24	0
0.955 ARN-H	44.22	44.22	0
0.851	44.21	44.21	0
0.743	44.21	44.21	0
0.7242	44.21	44.21	0
0.7054	44.21	44.21	0
0.6866	44.21	44.21	0
0.6678	44.21	44.21	0
0.649	44.21	44.21	0
0.59714	44.21	44.21	0
0.57985	44.21	44.21	0
0.528	44.21	44.21	0
0.409	44.20	44.21	0.01
0.323	44.20	44.21	0.01
10.266	44.20	44.20	0
0.2175	44.20	44.20	0
0.169	44.20	44.20	0
0.1215	44.20	44.20	0
0.074	44.19	44.20	0.01
0.064	44.19	44.19	0
0.059		**Bridge -- UPRR**	

0.054	44.19	44.19	0
0.053	44.19	44.19	0

6.0 Conclusions

The proposed channel and levee improvements accomplish the project's main goal of preventing floodwaters from entering Old Magpie Creek. The existing levee between Vinci Ave. and Raley Blvd. will be raised to accommodate the post-project 0.5% AEP design water surface profile. A plan and profile of the 0.5% AEP event along the levee raise and additional levee segment is included in Appendix D.

As a result of the project levee raise, increased discharge is routed through Magpie Creek Canal, and eventually Robla Creek. This includes an increase in peak discharges, velocities, and flood water volumes. Once the discharge conveys north of the Vinci Ave. Bridge, all floodwaters are contained within the Magpie Creek Canal.

The proposed triple-cell 5'x5' RCBC at the bike path crossing was assessed, and the culverts provide the needed capacity to convey the additional discharge to Robla Creek. It is noted the bike path overtops for all storm events studied, inducing weir flow as the predominant flow regime for these events. The proposed triple-cell 10'x7' RCBC at Raley Boulevard was also assessed, and the culverts provide the needed capacity to convey the Magpie Creek discharge across Raley Boulevard. The proposed culvert dimensions and layouts are attached in Appendix D.

Additionally, landside interior drainage behind the levee should be considered. For existing pre-project conditions, a flapgate/structure is currently utilized to drain Raley Boulevard into Magpie Creek. An equivalent size flapgate/structure through the proposed levee raise/extension should be included for the levee design.

Considering the project increases base flood (1% AEP) discharge and base flood elevation within the mapped FEMA Special Flood Hazard Area Zone AE and regulatory floodway, coordination with FEMA's ongoing Levee Analysis and Mapping Plan (LAMP) effort is advised.

APPENDIX A

SITE RECONNAISSANCE PHOTOS

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Photo 1: Looking Upstream Toward Raley Blvd. from Left Descending Bank

Photo 2: Looking Downstream from Left Descending Bank, Brush Noted

Photo 3: Bridge at Raley Blvd. Looking Upstream

Photo 4: Bridge at Raley Blvd. Looking Downstream

Photo 5: Looking at Upstream Floodplain from Raley Blvd.

Photo 6: Looking at Confluence of Don Julio and Magpie Creek Canal

Photo 7: Looking Downstream from Left Descending Bank,
(38°, 39', 41.8", -121°, 25', 53.1")

Photo 8: Looking Upstream from Left Descending Bank,
(38°, 39', 41.8", -121°, 25', 53.1")

Photo 9: Looking Downstream from Left Descending Bank Toward Vinci Ave. Bridge

Photo 10: Looking Downstream at Vinci Ave. Bridge Upstream Face

Photo 11: Looking Upstream at Vinci Ave. Bridge Downstream Face, Tree in Channel Noted

Photo 12: Looking Upstream at Bike Trail Bridge Downstream Face

Photo 13: Looking Upstream along Robla Creek

Photo 14: Looking Downstream along Robla Creek

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APPENDIX B

2021 HYDROLOGIC ANALYSIS

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CESPK-ED-HH 04/16/2021

Attachment to Magpie Creek Hydrology Update Report

This memorandum documents two sets of hydrology data used by Magpie Final hydrology report "Magpie and Don Julio Creek- American River Common Features Design Phase Hydrologic Analysis (dated Dec 16, 2019)" and the hydrology data used during the hydraulic modeling PED phase for the Magpie Creek project. The peak flows included in the final hydrology report (and Tables 4-1-1, 5-1, 5-2, 5-3) are based on peak flows at the Patrol Rd. and does not include additional flows from local sub-basins (DJ100 and M130). These two sub-basins (DJ100 and M130) are located downstream of Patrol Rd. and discharge their flows to Magpie Creek Channel at Raley Blvd., downstream of the confluence of Magpie Creek and Don Julio Creek. Figure 1 shows the overall HMS model schematic used for hydrological modeling. Figure 2 highlights the main computation points and local sub-basins between Patrol Rd and Raley Blvd. The principal control points at Patrol Rd. are DJH(C) for Don Julio Cr and MM(C) for Magpie Cr at Patrol Rd. The hydraulics team is utilizing total flow from all four computation points that is expected to be conveyed by the Magpie Creek Channel for "With Project" conditions. For the "Without Project" condition, local flows could be diverted to Lower Magpie Creek due to channel overtopping at present condition. However, for "With Project" conditions, total flows (combined flow from 4 computation points shown in Figure 2) are expected to be conveyed through the channel with no overtopping (losses).

Table 1 summarizes the peak flows from individual computation points and maximum combined peak flows (cfs) from Upper Magpie Watershed for N-year Events (used by hydraulics team for the PED phase).

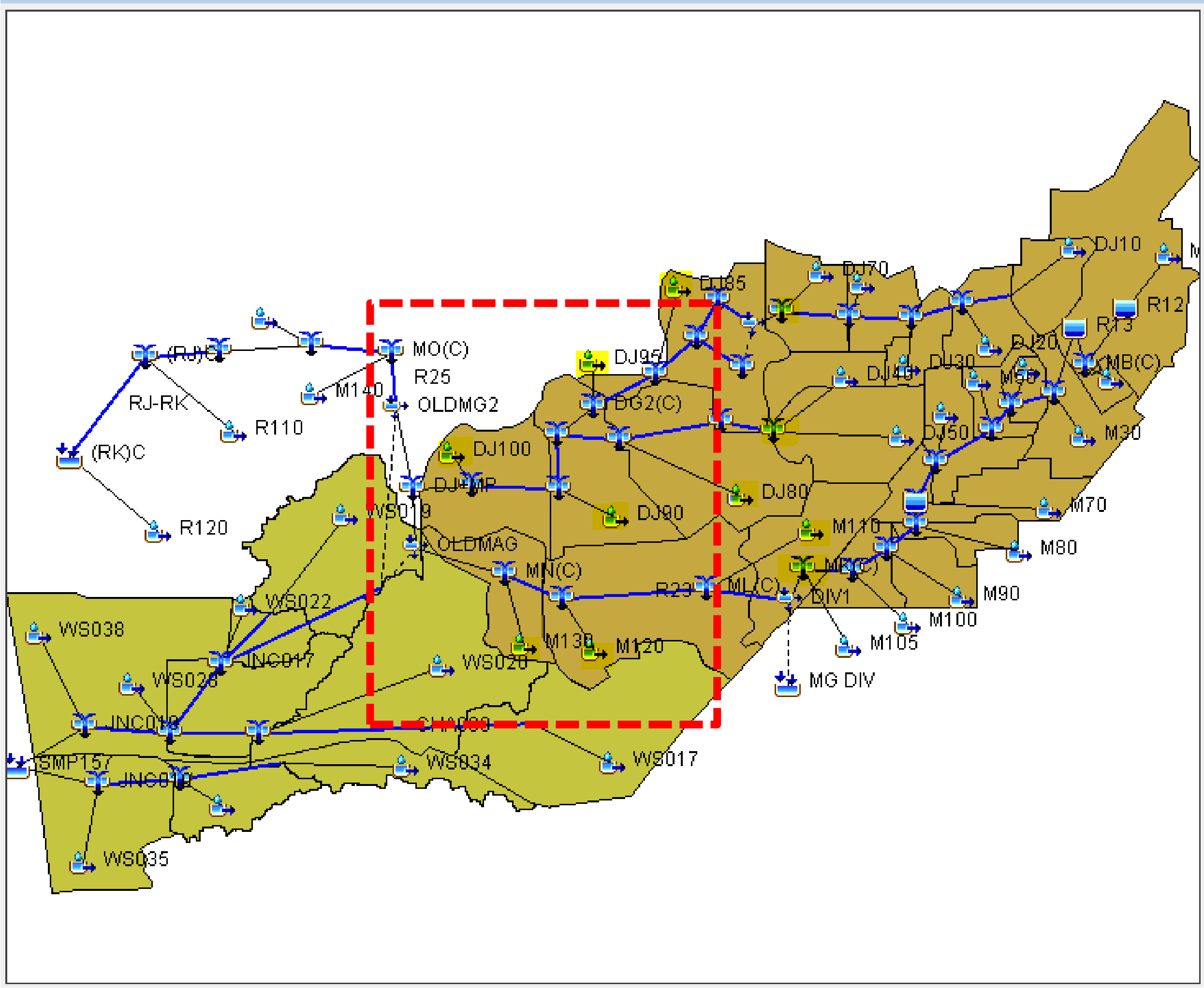


Figure 1. HMS model schematic for Magpie and Don Julio Creeks showing locations of sub-basins, computation points (junctions) and reaches. Rectangular section is zoomed further in Figure 2.

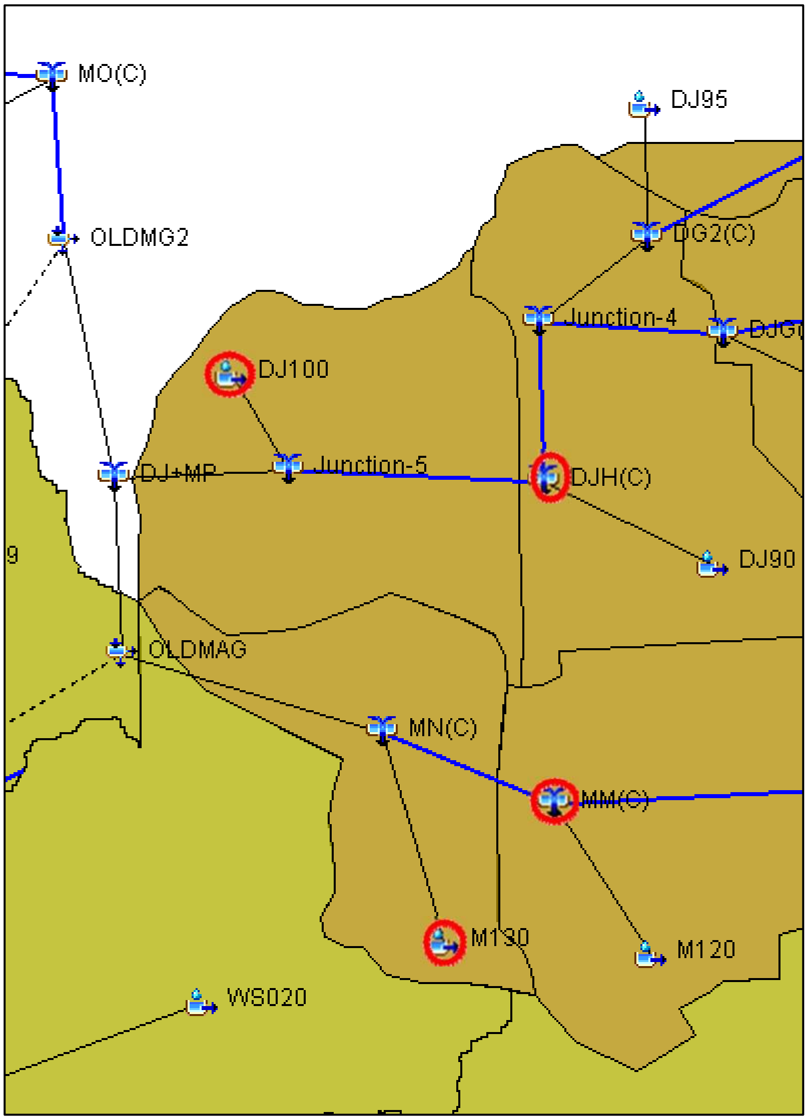


Figure 2. Close-up of area shown in Figure 1 showing main computation points and local sub-basins between Patrol Rd and Raley Blvd. The principal control points highlighted in red, DJH(C) for Don Julio Cr at Patrol Rd and MM(C) for Magpie Cr at Patol Rd. Locations DJ100 and M130 are local sub-basins downstream of Patrol Rd and upstream of Raley Blvd on Don Julio and Magpie Cr respectively.

Table 1: Maximum Combined Peak Flows (cfs) from Upper Magpie Watershed for N-year Events

Flows in CFS					
Event	**DJH(C)**	**MM(C)**	**DJ100**	**M130**	Total
002 YR	686.91	484.56	62.35	82.19	**1,255.35**
005 YR	877.96	541.82	82.66	103.91	**1,521.32**
010 YR	1,048.52	599.49	100.53	123.30	**1,758.22**
025 YR	1,306.06	690.20	127.09	152.50	**2,118.11**
050 YR	1,522.45	749.44	149.18	177.25	**2,426.56**
100 YR	1,763.81	811.00	173.41	204.82	**2,777.60**
200 YR	2,030.07	914.55	200.55	235.94	**3,169.21**
275 YR	2,168.57	971.06	214.95	252.93	**3,366.47**
325 YR	2,242.47	1,000.35	222.31	261.61	**3,469.50**
500 YR	2,331.63	1,045.24	231.91	270.07	**3,612.86**

Notes:

1) Flows computed in HEC-HMS 4.2 in 2019.

2) DJH(C) is combined flow on Don Julio Cr at Patrol Road.

3) MM(C) is combined flow on Magpie Cr at Patrol Rd.

4) DJ100 is the local flow into Don Julio Cr between Patrol Rd and Raley Blvd

5) M130 is the local flow into Magpie Cr between Patrol Rd and Raley Blvd.

Magpie and Don Julio Creek

American River Common Features Design Phase Hydrologic Analysis

Sacramento, California

16 December 2019

1.0 Introduction and Scope:

This report documents the development of hydrology including flow frequency on Magpie and Don Julio Creeks near and downstream of McClellan Airport for use with design studies along Magpie Creek (Cr) at Raley Boulevard in the northern Sacramento area in California (See figure 1-1).

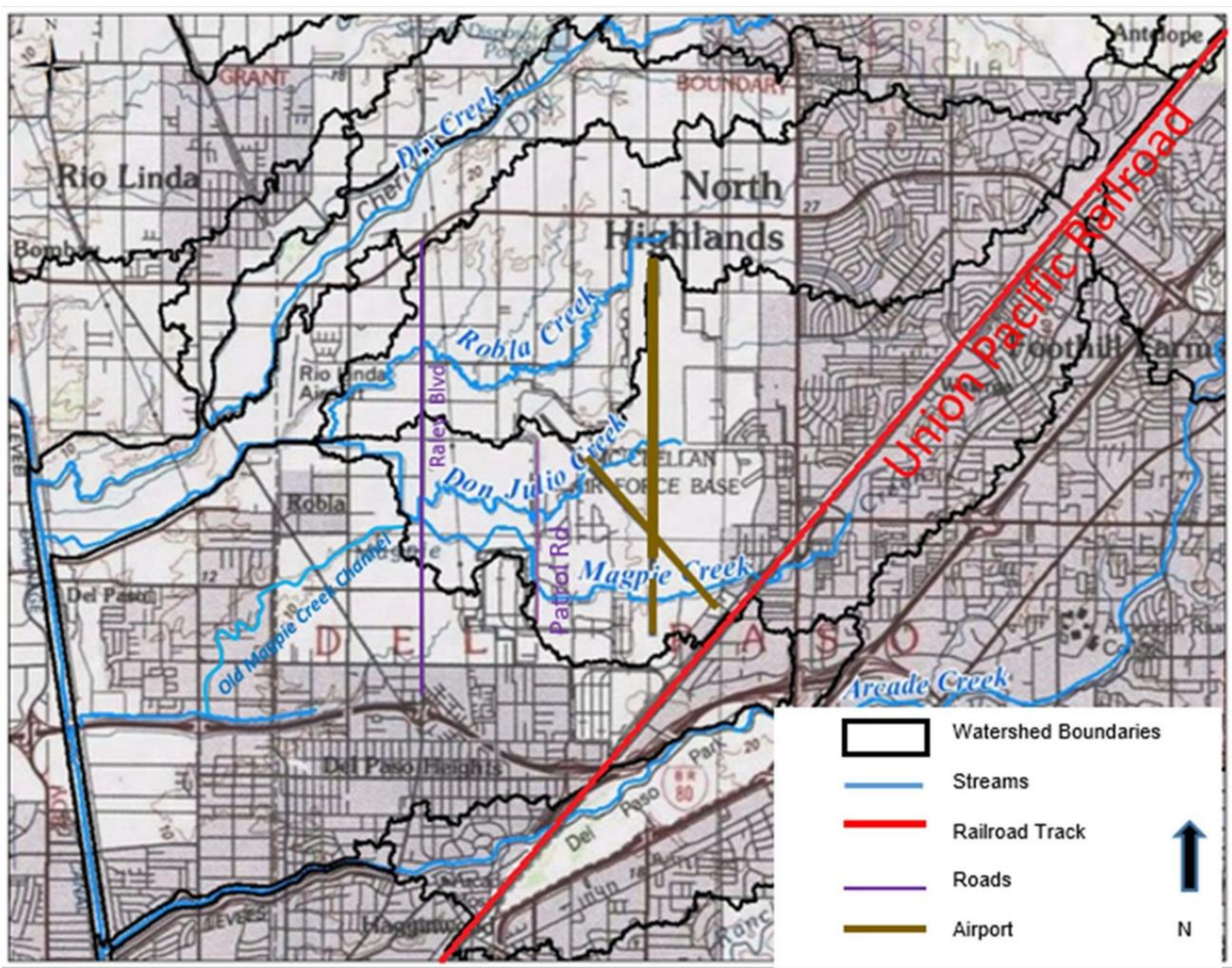


Figure -1-1 Map showing locations of Magpie and Don Julio Cr and sub-basins, McClellan Airport and Union Pacific Railroad (USACE 2019).

The main focus of current hydrological modeling are the following locations: 1) Magpie Cr at Raley Boulevard, MN(C) and 2) Don Julio Cr upstream of the Magpie Cr confluence, Junction 5. These locations do not have gauges with a suitable record so annual exceedance flow probability is computed from rainfall-runoff modeling using Depth Duration Frequency (DDF) data such as that provided in NOAA Atlas 14 (NOAA14). USACE (1993 and 1999) report that floods that do the most damage in the Magpie Cr Watershed are short duration intense cloudburst cells imbedded in general rainstorms and the occasional thunderstorms that occur during the summer months of May through September. The Columbus Day Storm of 1962 caused the water level to rise within 2 feet of the top of the levee on the south side of the diversion and flooded properties in the old Magpie Cr basin (USACE 1999). Recent general rain floods in 2017, 2012 and 1995 caused severe flooding in the old Magpie Basin and along the southern part of the basin along Raley Blvd (GEI 2019, USACE 1993 and 1999). Current modeling for existing conditions indicates that at the .04 AEP event, water begins flowing down the old Magpie Creek Channel and at the .01 AEP stage, roads are covered, and buildings begin to take on water. The level of protection that is being targeted is to protect structures from a 0.005 (1/200) AEP flood. More detailed descriptions of flood impacts will be detailed in the hydraulic modeling documentation for this project.

Proposed project improvements on Magpie Creek are shown in the Figure 1-2, although the design team may change some aspects of the features that are to be constructed. The study team is also considering raising Raley Boulevard to reduce the risk of flooding it during a large flood event. None of these changes will affect the volume of runoff since the flows are generated near and upstream of Patrol Road and there is no change to the soil and land cover conditions." The watershed will remain mostly open area near the airport and residential/ commercial upstream of the airport and there will be no significant change in overall percent impervious or soil loss parameters. However, the project features could change the instantaneous peak flow due to hydraulic impacts. Water surface profile impacts from project features will be documented in the Hydraulic documentation for this project. Figure 1-2 shows the floodplain in the vicinity of Raley Boulevard is produced by commingling of runoff from Magpie and Don Julio Cr.

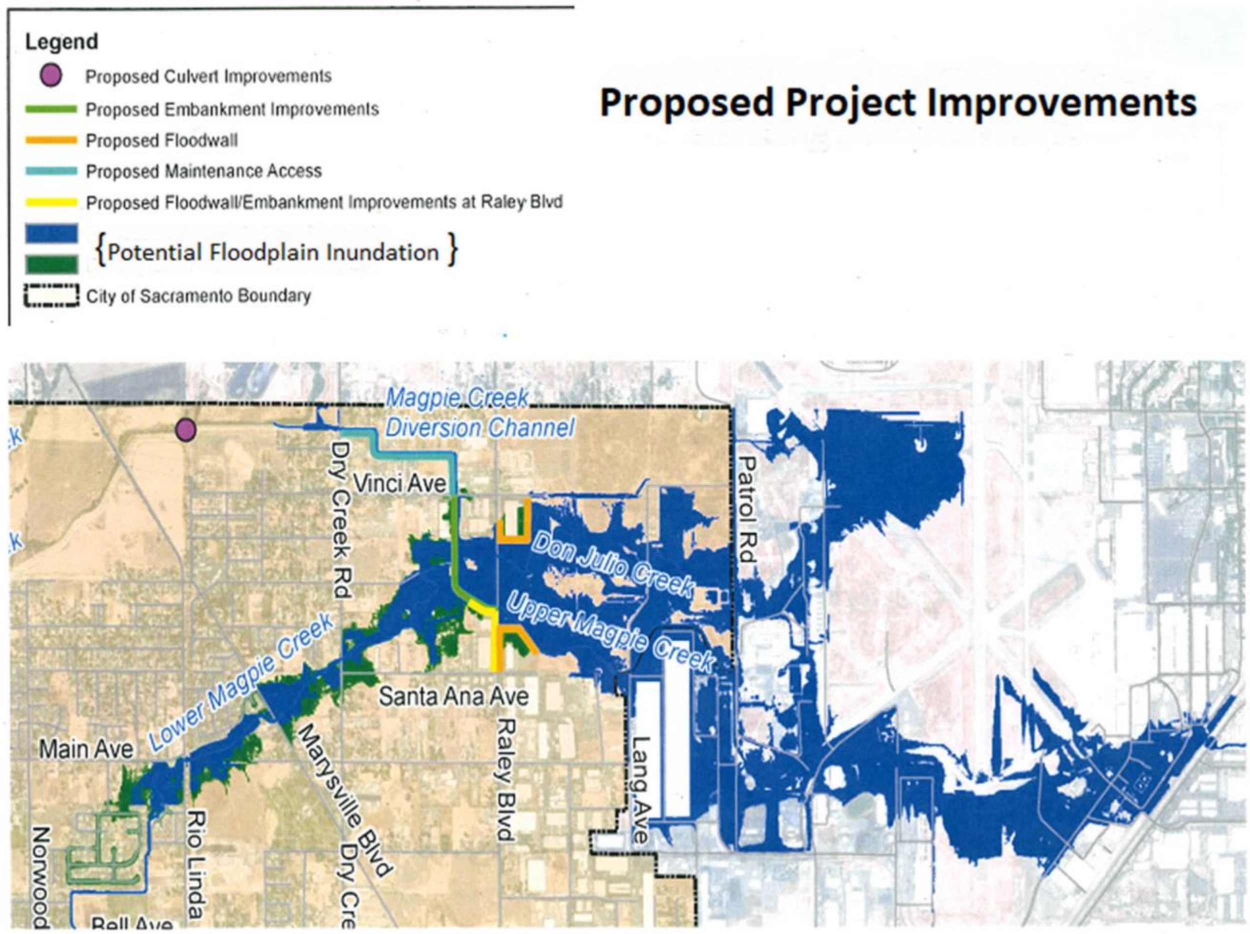


Figure 1-2. Proposed Project Improvements

For floodplain modeling of the project area, there are two distinct plans under consideration. The most likely plan is to input two hydrographs (Upper Magpie Cr at Patrol Road and Don Julio Cr at Patrol Road) as the upstream boundary condition flows in the hydraulic model. Two local flow hydrographs (M130 on Magpie Cr and DJ100 on Don Julio Cr) would be input into the hydraulic model downstream of Patrol Road. This plan would hydraulically model the commingling of flows from the two creeks, including attenuation of the hydrographs in the storage areas between Patrol Road and the proposed floodwalls shown in Figure 1-2.

An alternative plan under consideration starts the hydraulic modeling upstream in the vicinity of the airport. This alternative plan could potentially change the attenuation of the runoff hydrographs in the storage areas between the airport and Patrol Road. The FEMA (2014) model does attenuate flows in the vicinity of the airport; however, routing the flows in HEC-RAS might change the attenuation in this reach. This alternative floodplain modeling plan is described in more detail in Section 4.2. The hydraulic modeling team will decide the approach to use.

The Sacramento County Drainage Design Manual (CCSDM 1996) has several different duration storm patterns including a 24-hour, 5-day, and 10-day length hyetographs. The hyetographs are scaled based on depth duration-frequency values for 24-hour, 5-days, and 10-days respectively. The depth-duration-frequency in the drainage design manual is not based on NOAA14. The 24-hour storm pattern maximizes peak flow for design of channels. The longer duration storm patterns produce lower peak flows but more runoff volume. Hydraulic modeling by GEI, a contractor working for the City of Sacramento, indicated the runoff from the 24-hour design storm produced higher water surface elevation profiles on Magpie Cr than longer duration storms[1].

2.0 Previous Studies:

2.1 Sacramento County/ FEMA Region IX Hydrologic Analysis:

This study developed hydrographs for Magpie Cr for the 10-, 2-, 1-, and 0.2% AEP flood events using an HEC-HMS model (the FEMA model) which is an updated version of the HEC-1L /Sac-Calc model developed by Borcalli and Associates (FEMA 2014, SACWRD 2011). The FEMA model included additional nine sub-basins with a total of 34 subbasins, mainly in the "Old" Magpie Cr overflow area, that were not present in the Borcalli and Associates HEC-1L model (FEMA 2014). The HMS model was used to produce peak frequencies and hydrographs for Magpie and Don Julio Cr between McClellan airport and Raley Boulevard just upstream of the confluence and the old Magpie Cr drainage. The model used a 24-hour duration storm event and depths and generated 10-, 2-, 1- and 0.2% AEP peak flows of 565, 692, 743 and 864 CFS respectively along Magpie Cr at Raley Boulevard (FEMA, 2014). The precipitation for this model was developed in the SacCalc pre-processor which follows the criteria specified in the Sacramento County Drainage Manual but does not use NOAA Atlas 14 point precipitation estimates. In order to produce a total flow hydrograph at the confluence of Magpie and Don Julio Creeks (without reflecting potential diversion of a portion of the runoff to Old Magpie Cr), one must add the Magpie Cr at Raley Blvd (MN(C) index point) and Don Julio Cr above Magpie Cr (Junction 5) hydrographs together in the FEMA model. For the 1% ACE event, combining these hydrographs results in a peak flow of 2,406 cfs and a 24-hour volume of 680 cfs. Attachment 1 is a copy of the FEMA Region IX Hydrologic Analysis.

2.2 Central Valley Hydrology Study (CVHS):

USACE and California Department of Water Resources (DWR) collaborated on the Central Valley Hydrology Study (CVHS) to develop flow frequency for various locations in California's Central Valley. The relevant portion of the CVHS model set was the Natomas Stream group model (USACE 2013). In this model, two sub-basins were developed at the confluence of Magpie and Rio Linda (Robla) Cr: first sub-basin represented Magpie and Don Julio Cr, and the other sub-basin represented Robla Cr and its tributaries. NOAA Atlas 14 point precipitation estimates from 15 minutes to 10 days were used to develop 50-, 10-, 4-, 2-, 1-, 0.5-, 0.36-, 0.31 and 0.2 % ACE peak flows of 607, 1077, 1420, 1734, 2066, 2357, 2522, 2616 and 2739 CFS respectively for Magpie Cr upstream of Robla Cr (USACE 2019, 2013). The hydrologic parameters for the CVHS model were developed as described in section 5 and attachment 2.

The FEMA model was reviewed by USACE in 2019 and adopted for the pre-construction and design phase on Magpie Creek (referred hereafter as Attachment 2). Attachment 2 (in reference to Figure 4) compares peak flows and 24 hour volumes at Magpie Cr upstream of Robla (Rio Linda) Cr. for both CVHS and FEMA (2014) models. The 1% peak flow between the two models compared reasonably well, resulting in a 17% difference between the two models. The CVHS and FEMA 1% AEP peak flows are 2,066 cfs and 2,406 cfs respectively. The CVHS model runs on a 15 minute time step while the FEMA

[1]Powerpoint presentation dated 20 May 2019 by GEI Consultants (contractor for City of Sacramento).

model runs on a 2 minute timestep. The difference in the 24 hour volume (28%) is 942 cfs (CVHS) and 680 cfs for FEMA (2014). This could be attributed to development of finer subbasin resolution in the FEMA model and differences in precipitation inputs.

The CVHS model has only one subbasin representing Magpie Cr. Therefore, there are no concentration points at Patrol Road to compare with the FEMA model. In attachment 2, peak flows and volumes for Magpie Cr and Don Julio Cr at Patrol Road have been estimated for the CVHS model.

The 2014 FEMA model was reviewed and adopted by USACE in 2019 for the following reasons: 1) the FEMA model was more detailed and had over 20 subbasins for the watershed compared to one subbasin for the USACE 2019 model 2) the model compared well with previous studies of the watershed 3) soil loss rates were similar to those in two USACE studies 3) the GRR 2015 Study adjusted soil loss rates based on calibration of a larger domain model to flow frequency curves developed for stream gages on Dry and Arcade Creeks 3) boundary condition hydrographs for the hydraulic model were needed for Don Julio and Magpie Cr upstream of the concentration point in the 2019 CVHS model. Comparison of peak and volume for the three models are shown in the figure below.

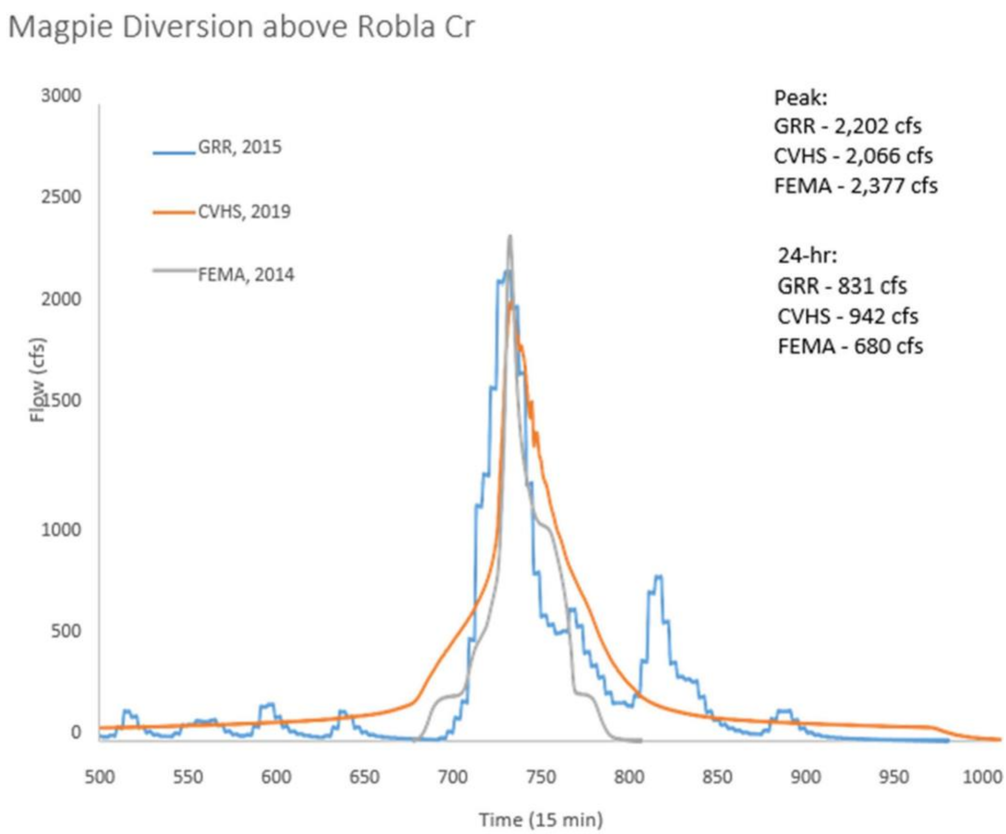


Figure 2-1. Comparison of original FEMA model with past studies.

3.0 Current Model:

3.1 Parameters:

For this design phase, Sacramento District of the U.S. Army Corps of Engineers adopted the FEMA HEC-HMS model for Magpie and Don Julio Cr. The FEMA model includes Robla Cr and has 39 sub-basins. Of those, 26 include Magpie Cr and Don Julio Cr. The remaining sub-basins are in "Old Magpie Cr" and lower Robla Cr. A set of diversions on Magpie Cr and Don Julio Cr just upstream of the natural confluence diverts flows away from Old Magpie Cr toward Robla Cr and the main outlet. During high flow events, water overflows the diversions into the Old Magpie Cr watershed and out the secondary outlet.

Figure 3-1 Magpie -Don Julio Cr Confluence and diversions. Don Julio Cr comes in from the upper right and is diverted below Raley BLVD to Magpie Cr which comes in from the Lower Right. Magpie Cr is then diverted northwest and north along the prominent levee to Robla Cr. The old Magpie and Don Julio Cr converge on the left side of the photo and are overflow channels for larger events.

Figure 3-1 shows a photograph of the confluence at Raley Blvd. Total drainage area of the entire watershed is 14.23 square miles and that of the "active" drainage area (Magpie and Don Julio Cr) is 8.13 square miles. The individual sub-basin drainage areas are smaller (less than 1 square mile). The model uses the initial and constant loss method, the USBR dimensionless unit hydrograph transform method and no base flow. The sub-basin parameters are shown in Table A-1 of Appendix A.

The initial soil loss rate in USACE's adopted model was based on the 0.01 AEP FEMA model provided by Sacramento County (0.10 inches). Per Table 5-1 in the Sacramento County Design Manual, initial soils loss rates were adjusted for each frequency flood modelled by USACE. The recommended initial soil loss for a 0.005 AEP storm is 0.08 inches.

Lag Time: Sacramento County provided the 0.01 AEP FEMA model to USACE. The lag time in the 0.01 AEP FEMA model was maintained for all frequency model runs performed by USACE. Table 7-6 of the Sacramento County Design Manual recommends increasing lag times for piped areas with overland release or developed channelization and land use densities greater than 1 to 2 dwelling units per acre of land. The reason given is that flow that exceeds pipe or channel capacities can cause temporary flooding and attenuation in streets and therefore it is expected that lag times will become longer. The HMS model provided by Sacramento County uses unit hydrograph as a direct input for rainfall-runoff transformation. The original sub-basin parameters (such as L, Slope of L, and Lca) to recompute the lag time are not currently available. This effort would take some time and could be performed in a future analysis. To perform a sensitivity analysis, USACE took an older HEC-1 model of Magpie Creek (for which the above raw parameters were available) and computed unit hydrographs for the 0.01 and 0.005 AEP events for subbasins that had more than 2 dwelling units per acre. The resulting unit hydrographs had an 8% longer lag time and a maximum peak flow that was reduced by 5 to 6% (difference between the 0.01 AEP and 0.005 AEP events). It is therefore an estimation that applying the Sacramento County Design criteria to the 0.005 AEP model would decrease peak flow in 0.005 AEP model by 6% or less. The current model adopted by USACE does not have this increased lag adjustment for the 0.005 AEP event; therefore, it is considered conservative.

Three routing methods are used in this model: Modified Puls, Muskingum, and Muskingum Cunge. Tables A-2, A-3 and A-4 in the appendix show all three sets of routing parameters. A complete description of the FEMA model is found in attachment 1: **FEMA Region IX Hydrologic Analysis – Magpie Cr, Sacramento County, California**, dated June 2014.

3.2 Precipitation Development:

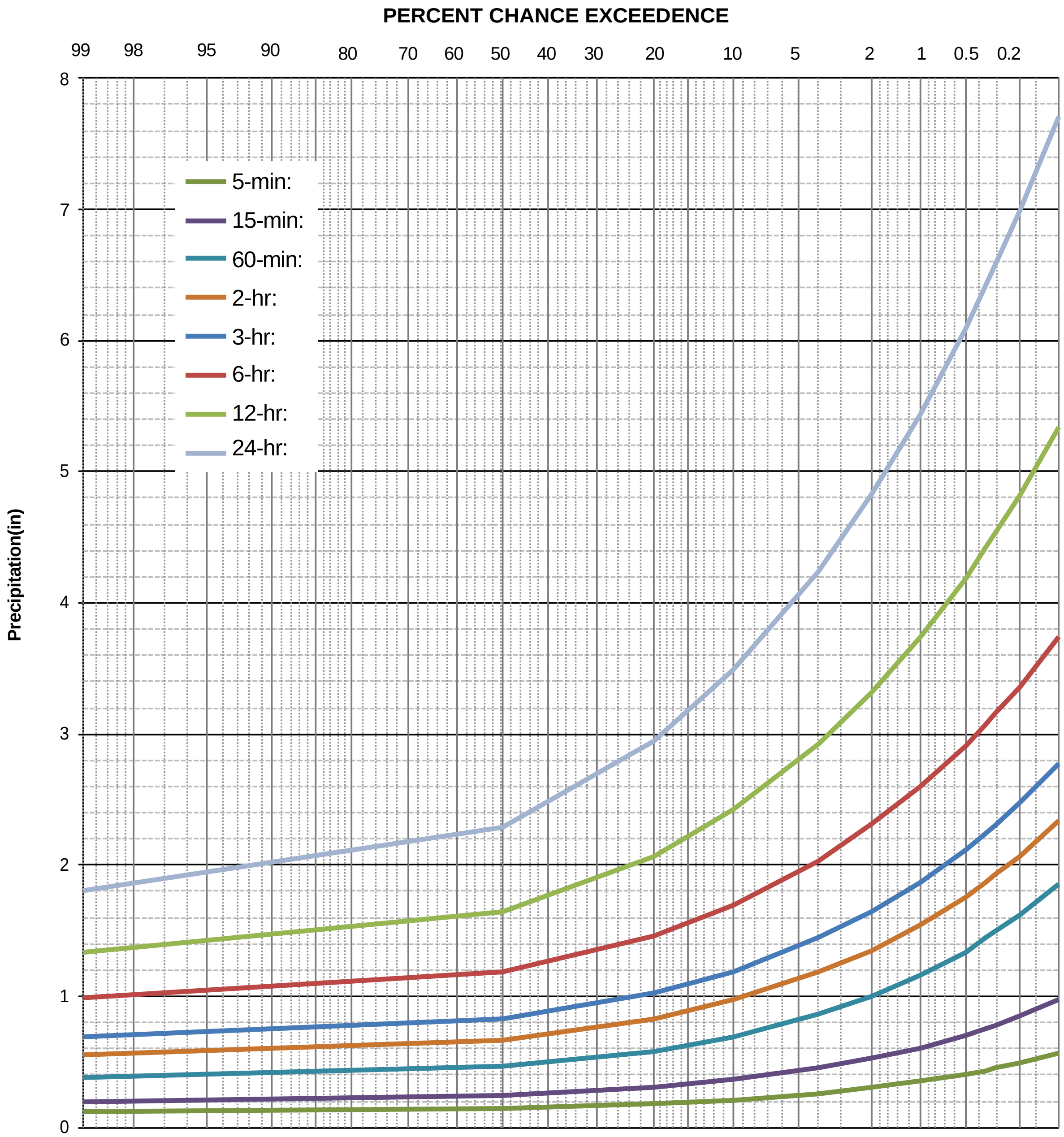
NOAA Atlas 14 Precipitation Frequency Server, https://hdsc.nws.noaa.gov/hdsc/pfds/, was used to obtain point precipitation frequency estimates at the McClellan Airport (KMCC): Latitude, 38.6687°; Longitude, -121.3948° and elevation, 71.35 ft (USGS). To maximize peak flow, a 24 hour storm series was developed from NOAA14. The durations and depths are plotted in Plate 3-1 and tabulated in table 3-2-1 for all standard frequencies. In addition to the standard frequencies, the USACE study team desires to obtain additional flow frequencies of 0.36% ACE (1 in 275 year) and 0.31% (1 in 325 year) as these profiles were also developed for the American and Sacramento River reaches of the project. However, these frequencies are not included in the NOAA Atlas 14 tables and plots. Therefore, a special interpolation procedure using "Z" values is set up as follows.

1) The "Z" values corresponding to required probabilities are computed ("Z" is a statistical test value which is a function of mean and standard deviation of the data and used as a surrogate for frequency to avoid the issue of interpolation in log space).

Table 3-2-1 NOAA Atlas 14 Precipitation Frequency Estimates: McClellan Airport, Sacramento, CA.									
1/AEP	1	2	5	10	25	50	100	200	500
5-min:	0.114	0.139	0.176	0.209	0.259	0.302	0.35	0.405	0.489
15-min:	0.198	0.241	0.305	0.362	0.449	0.524	0.607	0.702	0.847
60-min:	0.378	0.462	0.583	0.693	0.859	1	1.16	1.34	1.62
2-hr:	0.553	0.667	0.827	0.969	1.18	1.35	1.54	1.76	2.07
3-hr:	0.691	0.83	1.03	1.19	1.44	1.65	1.87	2.11	2.47
6-hr:	0.983	1.19	1.46	1.7	2.03	2.31	2.6	2.91	3.36
12-hr:	1.33	1.64	2.06	2.42	2.92	3.32	3.74	4.19	4.82
24-hr:	1.8	2.29	2.95	3.49	4.24	4.83	5.44	6.09	6.99
Note: Accessed on: Wed Jul 3, 2019, at 15:02:44.									

Frequency curves are often plotted using “Z” values as the x-axis instead of the actual probability. 2) The “Z” values obtained in step 1 along with those of the standard frequencies and the accompanying precipitation depths are tabulated and linear interpolation is performed with the known array being the “Z” values and the array operated on being the precipitation depth for the duration of interest. This interpolation was carried out for durations ranging from five minutes to 24 hours and is tabulated in Table 3-2-2. Values were checked for consistency and accuracy and plotted in Plate 3-1.

Table 3-2-2 Frequency Storm Series for Magpie and Don Julio Cr, Sacramento CA									
AEP	St Dev (Z)	5-min:	15-min:	60-min:	2-hr:	3-hr:	6-hr:	12-hr:	24-hr:
1.0000	-2.3268	0.11	0.20	0.38	0.55	0.691	0.983	1.33	1.8
0.5000	0.0000	0.14	0.24	0.46	0.67	0.83	1.19	1.64	2.29
0.2000	0.8415	0.18	0.31	0.58	0.83	1.03	1.46	2.06	2.95
0.1000	1.2817	0.21	0.36	0.69	0.97	1.19	1.7	2.42	3.49
0.0400	1.7511	0.26	0.45	0.86	1.18	1.44	2.03	2.92	4.24
0.0200	2.0542	0.30	0.52	1.00	1.35	1.65	2.31	3.32	4.83
0.0100	2.3268	0.35	0.61	1.16	1.54	1.87	2.6	3.74	5.44
0.0050	2.5762	0.41	0.70	1.34	1.76	2.11	2.91	4.19	6.09
0.0036	2.6845	0.44	0.75	1.44	1.87	2.24	3.07	4.42	6.41
0.0031	2.7398	0.45	0.78	1.49	1.93	2.30	3.15	4.53	6.58
0.0020	2.8785	0.49	0.85	1.62	2.07	2.47	3.36	4.82	6.99
0.0010	3.0905	0.56	0.97	1.86	2.34	2.77	3.74	5.34	7.71
Note: Values are from NOAA Atlas 14 (Latitude: 38.6687˚ and Longitude: -121.3984˚) and linear interpolation done in MS Excel using the function “LinInterp” (Moore, 2010).									



NOTES:

1. Peak rainflood pool may not be caused by the largest annual event, but sometimes by a smaller, later one.

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Lower American River , California.

PRECIPITATION FREQUENCY CURVES

U.S. ARMY CORPS OF ENGINEERS

SACRAMENTO DISTRICT

Revised Jul 2019 PLATE 3-1

These storm series were entered into the FEMA HMS model using the frequency storm in the HMS Meteorology model options panel. For each frequency, the depths corresponding to the durations tabulated in table 3-2-2 were entered along with total drainage area of the watershed (14 square miles) and the option to make precipitation depths uniform for all sub-basins. The newly constructed frequency storms, which produce pyramid shaped, balanced hyetographs with the maximum intensity at 50% (i.e., in the middle of hyetographs) were simulated using the first control specification and at two minute time steps starting at 01 Jan 2000 at midnight and ending on 02 Jan 2000 at 9:18 AM . This provides sufficient simulation time to route the resulting runoff hydrographs.

4.0 Results:

4.1 Main Flood Areas:

The main focus of current hydrological modeling are the following locations: 1) Magpie Cr at Raley Boulevard, MN(C) and 2) Don Julio Cr upstream of the Magpie Cr confluence, Junction 5. These are the areas where levees and other structures are being improved.

Table 4-1-1
FEMA HMS Model with NOAA14 Storm

% AEP	Magpie Cr at Raley Blvd.	Don Julio abv Magpie Cr
	Peak in CFS	Peak in CFS
50	438	706
20	519	909
10	589	1,087
4	681	1,357
2	747	1,582
1	811	1,832
0.5	882	2,112
0.36	916	2,263
0.31	932	2,340
0.2	963	2,437

These new peak flows (summarized in Table 4-1-1) are higher than the peak flows from the FEMA (2014) model for various AEP's. A comparison of the current FEMA model with NOAA14 based storms and the FEMA (2014) Study is shown in Table 4-1-2 below. The FEMA (2014) Study did not produce a 0.5% (1/200AEP event for comparison.

Table 4-1-2 Compare HMS Model Results			Percent Difference (%)
%AEP	FEMA Model with NOAA14 Magpie Cr at Raley Blvd.	2014 FEMA Model Magpie Cr at Raley Blvd.	
%	CFS	CFS	
10	589	565	4%
2	747	692	8%
1	811	743	9%
0.2	963	864	11%

The higher peaks are due to higher precipitation depths obtained from NOAA Atlas 14, which are comparatively higher than used in the SacCalc model.

4.2 Hydraulic Model Input Hydrographs:

As mentioned in Section 1.0, there are two distinct plans under consideration for modeling the floodplain depths for with and without project conditions. One plan involves beginning the hydraulic modeling at Patrol Road (Magpie Cr at Patrol Road and Don Julio Cr above Magpie Cr). The other option would start the modeling on the eastern edge of the airport as the upstream boundary condition. The two plans are described in more detail below.

Use Patrol Road as Upstream Boundary Condition for Hydraulic Model. This plan involves inputting two hydrographs (Magpie Cr at Patrol Road and Don Julio Cr above Magpie Cr) as the upstream boundary condition flows in hydraulic model. These hydrographs are labeled as MN (C) and Junction 5 in the HMS model. An additional two local flow hydrographs (M130 on Magpie Cr and DJ100 on Don Julio Cr) would be input downstream of Patrol Road. This plan would hydraulically model the commingling of flows from the two creeks, including attenuation of the hydrographs in the storage areas between Patrol Road and the proposed floodwalls shown in Figure 1-2.

Use Eastern Edge of Airport as Upstream Boundary Condition for Hydraulic Model. An alternative plan under consideration starts the hydraulic modeling upstream near the eastern edge of the airport. This could potentially change the attenuation of the runoff hydrographs in the storage areas between the airport and Patrol Road compared to the adopted FEMA model.

Three points upstream of the airport are chosen and tabulated below, two on Don Julio Cr and one on Magpie Cr. Additionally eight sub-basin flows from sub-basins within and downstream of McClellan Airport, three on Magpie Cr and five on Don Julio Cr, are selected as candidates for input into a hydraulic model. Although both peak flows and runoff volumes are considered, peak flows are of more interest to this study because of their impacts on the design of levees and other project features. Flows and volumes are tabulated in tables 4-2-1, 4-2-2, and 4-2-3 for computation points along Don Julio and

Magpie Cr, local flows coming from sub-basins downstream of the McClellan Airport and upstream of the Magpie Don Julio confluence, and diversion near Raley Boulevard (See Figure 4-2 below).

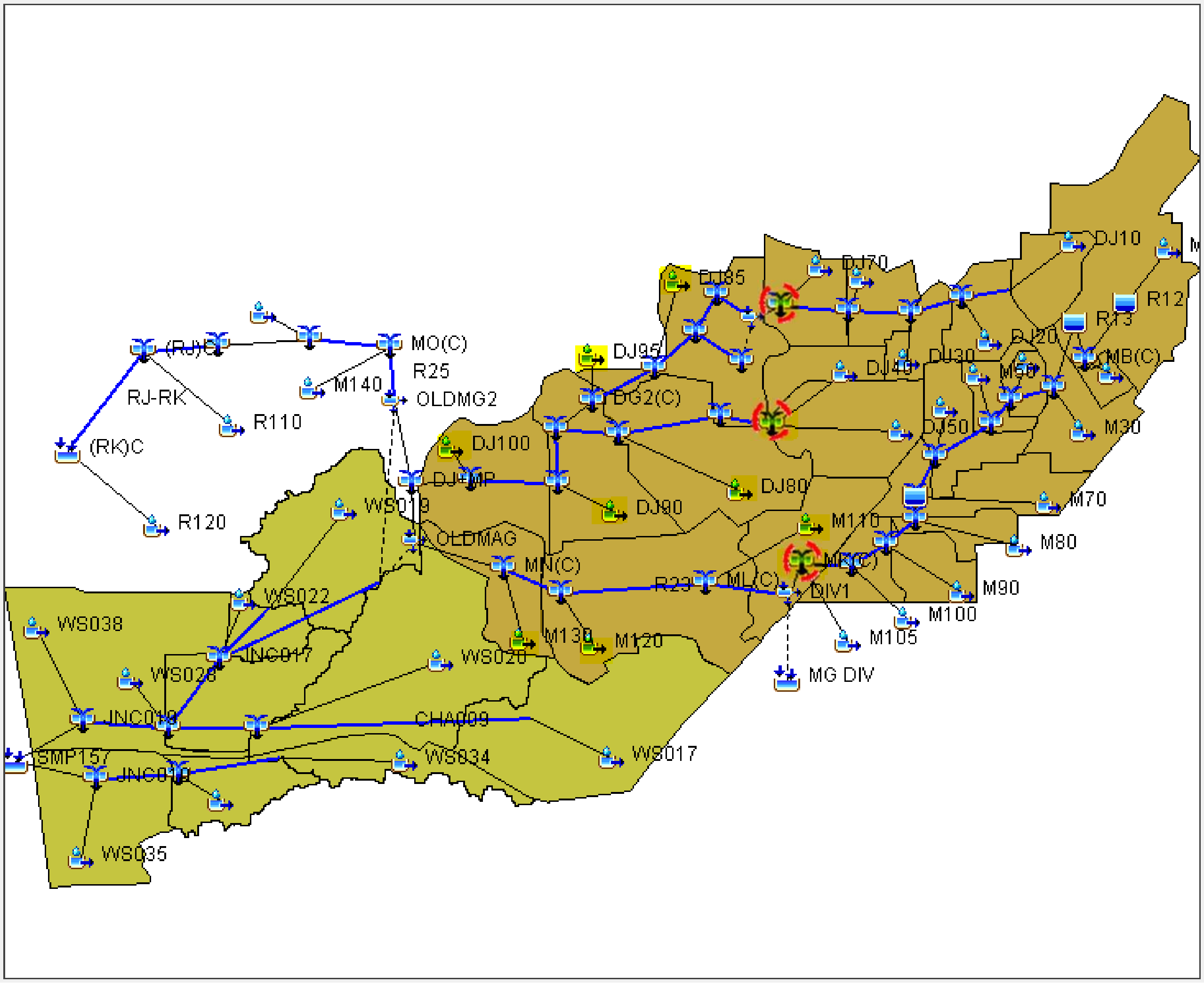

Figure 4-2 FEMA HMS Model Schematic highlighted sub-basins and junction points indicate where hydrographs are to be imported into a hydraulic model for further refinement. The peaks and average volumes of the hydrographs at these points are tabulated below. The three highlighted but not labeled junctions are from north to south: DJF(C) North Branch Don Julio Cr above airport boundary; DJD(C) Don Julio Cr South Branch above airport boundary and MK(C) Magpie Cr at the Union Pacific Railroad southeast of the Airport.

The main junction points are Don Julio Cr south branch above the airport, DJD(C); Don Julio Cr North Branch above the airport boundary, DJF(C); and Magpie Cr at the Union Pacific Railroad southeast of the airport, MK(C). The eight sub-basins between the airport and Raley Boulevard are: South McClellan Airport local flow, M110; Patrol Rd Local, M120; Raley Boulevard Local, M130; South Branch Local, DJ80; North Branch Local, DJ85; Don Julio at Patrol Rd Local, DJ90 ; West Airport Local, DJ95; and Don Julio local at Magpie Cr Confluence, DJ100. These points and sub-basins are selected for analysis due to the fact that attenuation and other effects from the airport, the downstream diversions, and flat areas would be large and thus needs to be modeled in the hydraulic model.

Table 4-2-1 Flows Computation Points on Don Julio and Magpie Cr At of McClellan Airport (KMCC)						
Frequency	South Branch Don Julio Cr abv airport DJD(C)		North Branch Don Julio Cr abv airport (DJF(C)		Magpie Cr at UP Railroad MK(C)	
% AEP	Peak CFS	Vol AF	Peak CFS	Vol AF	Peak CFS	Vol AF
50.0	198.74	58.49	286.25	83.89	473.40	210.29
20.0	252.26	78.59	365.45	114.89	602.63	285.80
10.0	300.02	95.61	436.40	142.57	629.35	353.93
4.00	372.33	119.32	543.66	181.34	690.56	449.49
2.00	433.85	138.01	634.63	211.94	753.38	524.90
1.00	502.43	157.36	736.55	243.63	822.69	602.99
0.50	580.14	177.99	851.75	277.43	898.96	686.29
0.36	622.64	188.22	914.94	294.21	939.47	727.63
0.31	644.34	193.45	947.21	302.79	960.30	748.76
0.20	662.61	204.27	977.18	320.53	991.41	792.47
Note: Results computed in HEC-HMS v 4.2 on 12 July 2019.						

Table 4-2-2 Local Flows along Magpie Cr Downstream of McClellan Airport.						
Frequency	South McClellan Airport local M110		Patrol Rd Local M120		Raley Blvd Local M130	
% AEP	Peak CFS	Vol AF	Peak CFS	Vol AF	Peak CFS	Vol AF
50.0	127.63	44.71	190.56	80.83	82.19	31.45
20.0	161.13	58.61	241.73	108.85	103.91	41.78
10.0	191.04	70.02	287.27	132.63	123.30	50.28
4.00	236.24	85.89	355.50	165.75	152.50	62.10
2.00	274.67	98.38	412.96	191.85	177.25	71.42
1.00	317.50	111.30	476.80	218.88	204.82	81.06
0.50	365.97	125.08	548.68	247.70	235.94	91.33
0.36	392.48	131.91	587.62	262.00	252.93	96.43
0.31	406.02	135.40	607.50	269.30	261.61	99.03
0.20	417.93	142.62	629.22	284.42	270.07	104.42
Note: Results computed in HEC-HMS v 4.2 on 12 July 2019.						

Table 4-2-3 Local Flows along Don Julio Cr Downstream of McClellan Airport.										
Frequency	South Branch Local DJ80		North Branch Local DJ85		West Airport Local DJ95		Don Julio Cr at Patrol Rd Local DJ90		Don Julio Local at Magpie Cr Confluence DJ100	
% AEP	Peak CFS	Vol AF	Peak CFS	Vol AF	Peak CFS	Vol AF	Peak CFS	Vol AF	Peak CFS	Vol AF
50.00	137.29	58.41	111.28	37.32	13.66	2.48	106.87	32.49	62.35	19.61
20.00	174.80	80.03	142.76	53.41	17.65	3.68	137.48	47.53	82.66	30.97
10.00	208.12	98.58	170.79	67.52	21.21	4.92	164.78	60.84	100.53	43.18
4.00	257.91	124.44	212.83	87.24	26.59	6.68	205.73	79.46	127.09	60.58
2.00	299.73	144.83	248.27	102.81	31.18	8.07	240.30	94.16	149.18	74.36
1.00	346.10	165.96	287.67	118.95	36.29	9.51	278.76	109.41	173.41	88.66
0.50	398.29	188.48	332.04	136.16	42.08	11.05	322.09	125.67	200.55	103.94
0.36	426.43	199.66	356.12	144.71	45.25	11.82	345.63	133.75	214.95	111.53
0.31	440.80	205.37	368.41	149.08	46.87	12.21	357.65	137.88	222.31	115.41
0.20	457.13	217.19	381.64	158.11	48.23	13.02	370.39	146.41	231.91	123.43
Note: Results computed in HEC-HMS v 4.2 on 12 July 2019.										

5.0 Comparison with Previous Studies

Because there are no long term flow or stage gages in the Magpie Creek watershed, model verification is carried out by comparison with modeled flows from other studies in the region such as the Central Valley Hydrology Study – Natomas-Area Stream Group – Pleasant Grove Cr, Dry Cr, and Arcade Cr Watersheds Hydrologic Analysis (USACE 2013) and the Natomas GRR Study (SAFCA and USACE 2015). The model domain for these two studies extends beyond Magpie Cr and covers Pleasant Grove Cr and Steelhead Cr basins. For Magpie Cr Watershed, two subbasins were developed at the confluence of Magpie Cr and Robla Cr (one for Magpie and one for Robla). Rainfall inputs used NOAA Atlas 14 precipitation-frequency depths to produce 50-, 20-, 4-, 10-, 2-, 1-, 0.5-, and 0.2% AEP hydrographs. Rainfall precipitation-frequency depths were obtained for durations 15-min to 10-days. Temporal distribution used HEC-HMS's default pyramid shaped rainfall pattern out to 10-days. The CVHS model loss rates and basin lag times were adjusted to better match the peak and 1-day frequency curves at two discharge gages locations: Dry Cr at Vernon Street (USGS #11447293) and Arcade Cr near Del Paso Heights (USGS 11447360) as discussed in attachment 2. Soil loss rates and basin lag times were estimated based on the adjustments needed on Dry and Arcade Cr. It is not known whether the original FEMA model was calibrated however results are similar with the CVHS and Natomas GRR HMS models which are calibrated and have been through independent review (See attachment 2). Magpie Cr Watershed is represented in the Central Valley Hydrology Study (CVHS) model as a single sub-basin (Sub_STL-2_5. These flows were then compared to combined hydrographs, from the current model and the 2014 FEMA model of Magpie Cr at a point just upstream from the major diversion structure, and Don Julio Cr above the Magpie Confluence (This was done to exclude the flow over the diversion structure on Magpie Cr during high water events). The current model and FEMA model runs are set at 2 minute time-steps and the CVHS model runs are set at 15 minute time-steps. Therefore, it was also decided to compare smoothed peak flows at a 30 minute time-step by computing 30 minute forward moving averages of the hydrographs and comparing their maximums. This was repeated for a 1-hour time step. The results of all three comparisons are shown in tables 5-1, 5-2, and 5-3 below.

Table 5-1
% Difference Current versus Previous Peak Flows-Magpie Cr at Robla Cr Diversion

AEP %	Current Peak	FEMA Peak	CVHS Peak	Current vs FEMA %	Current vs CVHS %
50	1,035		607		71%
10	1,513	1,537	1,076	-2%	41%
4	1,848		1,420		30%
2	2,118	2,151	1,734	-1%	22%
1	2,409	2,406	2,066	0%	17%
0.5	2,738		2,357		16%
0.36	2,917		2,522		16%
0.31	3,009		2,616		15%
0.2	3,141	2,990	2,739	5%	15%

Table 5-2
% Difference Current vs Previous 30 Minute Peak Flow-Magpie Cr at Robla Cr Diversion

AEP %	Current 30 min max	FEMA 30 min max	CVHS 30 min max	Current vs FEMA %	Current vs CVHS %
50	1,024		598		71%
10	1,493	1,517	1,065	-2%	40%
4	1,821		1,407		29%
2	2,085	2,115	1,722	-1%	21%
1	2,369	2,365	2,048	0%	16%
0.5	2,690		2,334		15%
0.36	2,864		2,497		15%
0.31	2,953		2,590		14%
0.2	3,083	2,930	2,725	5%	13%

Table 5-3 % Difference Current vs Previous 1 Hour Maximum Flow - Magpie Cr at Robla Cr Diversion					
AEP %	Current 1hr max	FEMA 1hr max	CVHS 1 hr max	Current vs FEMA %	Current vs CVHS %
50	998		595		68%
10	1,445	1,468	1,059	-2%	36%
4	1,757		1,400		26%
2	2,007	2,025	1,706	-1%	18%
1	2,276	2,260	2,014	1%	13%
0.5	2,579		2,294		12%
0.36	2,743		2,455		12%
0.31	2,827		2,547		11%
0.2	2,952	2,787	2,675	6%	10%

A difference in peak flows is observed between the CVHS model and two FEMA models for 30 minute and 1 hour time-steps and at more common frequencies. However, this difference decreases at larger frequencies and longer time-steps. For example, the difference between CVHS and FEMA model flows for the 0.2% AEP event with 1 hour time-step is 10 percent and for the un-smoothed peak 0.2% AEP flows it is 15%. This difference is likely due to one or more of the following: 1) Differences in resolution i.e., the time increment is 2 min for both the current model and the FEMA model and 15 min for the CVHS model; 2) Frequency storms in the current model (and in the FEMA model) are 24 hour total duration with minimum duration of 5 minutes while the CVHS model uses a 10 day storm Hyetograph with minimum duration of 15 minutes. Thus the lower durations are more well defined in the current model and the FEMA model than in the CVHS model; 3) Magpie Cr is modeled as a single local sub basin flow in CVHS (SUB_STL-2_5) which has a drainage area of 8.4 square miles and the current (and FEMA) model divides the Magpie / Don Julio watershed into 39 Sub basins (26 in Magpie and Don Julio Cr and the other 13 in the old Magpie and lower Robla Cr areas). The combined drainage area in the current model is 14 square miles including the 6 square miles covered by Old Magpie and Lower Robla Cr drainages; 4) the FEMA model frequency storms include aerial reduction using the TP-40 method (SCS 1955) and the CVHS hyetographs incorporated aerial reduction factors from HMR-59 (NOAA-NWS, 2002). The difference between the current model 0.2% flows and the FEMA 0.2% flows is around 5-6% and this is due to the use of the newer NOAA atlas 14 precipitation in the current model. To further investigate the reasons for large differences between two modeled flows, a brief experiment was performed using the FEMA model with a third control specification consisting of a 13- day simulation time and a 15 minute time interval along with the CVHS storm 500 year (0.2% AEP) Hyetograph (imported into a gauge named USACE500yr in the basin model). As with other current /FEMA model results, the output hydrographs from Magpie Cr upstream of the diversion structure and Don Julio Cr above the Magpie Confluence were combined into one hydrograph representing the Magpie and Don Julio drainages. The peak flow from this combined hydrograph is 3,135 CFS which is almost equal to that of the 0.2% AEP current composite peak flow hydrograph representing the Magpie and Don Julio drainages. Thus, it appears that the differences between the two models are due more to a more detailed hydrology present in the FEMA model than in the CVHS model for this region.

6.0 Conclusions:

The 2014 HEC-HMS FEMA model for Magpie Cr and its tributaries has been adopted for computing the design flows for the projects along Magpie and Don Julio Cr. The computed flow values are higher than the CVHS flows. However, this change could be attributed to a more detailed hydrology and other design specifications used to model the drainage area. It is recommended that attenuation at the airport be considered for further studies of the area. Additionally tabulated flows at the computation points on the upstream airport boundary along with sub-basins between the upstream boundary of the airport and the confluence of Don Julio and Magpie Cr be used in a hydraulic model of the watershed.

7.0 References:

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11. USACE, 1993 Magpie Cr Basin Feasibility Study.
12. GEI 2019, Photographs from recent flood damage on Raley Blvd at Magpie Creek and Don Julio Creek as given at a team meeting in 2019.

8.0 Appendix A Hydrologic Parameters in the Adopted Model.

Note: Initial loss of 0.08 is for the 0.005 AEP Design Event Flood

Table A-1

Watershed Parameters-FEMA Magpie and Don Julio Cr Watershed HMS Model.

Sub-Basin ID	Drainage Area Sq-Mi	Initial loss In	Constant Loss Rate in/hr	Impervious Percent	Unit HG ID
M10	0.885	0.08	0.07	46	M10
M20	0.052	0.08	0.07	55	M20
M30	0.283	0.08	0.07	55	M30
M40	0.084	0.08	0.06	66	M40
M50	0.119	0.08	0.06	69	M50
M60	0.248	0.08	0.07	60	M60
M70	0.319	0.08	0.06	64	M70
M80	0.113	0.08	0.07	59	M80
M90	0.17	0.08	0.07	53	M90
M100	0.125	0.08	0.06	70	M100
M105	0.058	0.08	0.06	76	M105
M110	0.407	0.08	0.05	85	M110
M120	0.846	0.08	0.06	66	M120
M130	0.302	0.08	0.05	75	M130
DJ10	0.198	0.08	0.07	54	DJ10
DJ20	0.22	0.08	0.07	54	DJ20
DJ30	0.138	0.08	0.07	53	DJ30
DJ60	0.173	0.08	0.06	63	DJ60
DJ70	0.272	0.08	0.06	45	DJ70
DJ85	0.508	0.08	0.06	36	DJ85
DJ95	0.045	0.08	0.07	17	DJ95
DJ50	0.436	0.08	0.06	68	DJ50
DJ40	0.171	0.08	0.06	66	DJ40
DJ80	0.665	0.08	0.06	56	DJ80
DJ90	0.481	0.08	0.06	28	DJ90
DJ100	0.453	0.08	0.07	3	DJ100
M140	0.125	0.08	0.08	11	M140
M150	0.233	0.08	0.07	37	M150
R110	0.222	0.08	0.11	22	R110
R120	0.849	0.08	0.09	37	R120
WS017	0.8077	0.08	0.062	46.9	WS017
WS020	0.9405	0.08	0.063	43.1	WS020
WS019	0.6583	0.08	0.07	21	WS019
WS022	0.1484	0.08	0.07	13.4	WS022
WS028	0.4414	0.08	0.07	32.4	WS028
WS038	0.9598	0.08	0.065	49.7	WS038

WS034	0.2653	0.08	0.07	36.2	WS034
WS025	0.26	0.08	0.065	48.7	WS025
WS035	0.5577	0.08	0.065	32.25	WS035

Table A--2

Magpie and Don Julio Cr -FEMA Modified Puls Routing Parameters.

Reach	Storage Discharge Curve	# Sub-Reaches	Initial Condition
R14	R14(Basin 1)	2	Inflow = Outflow
R15	R15(Basin 1)	2	Inflow = Outflow
R16	R16(Basin 1)	2	Inflow = Outflow
R17	R17(Basin 1)	3	Inflow = Outflow
R19	R19(Basin 1)	2	Inflow = Outflow
R20	Reach-1(Basin 1)	4	Inflow = Outflow
R21	R21(Basin 1)	2	Inflow = Outflow
R22	R22(Basin 1)	4	Inflow = Outflow
R23	R23(Basin 1)	5	Inflow = Outflow
R24	R24(Basin 1)	5	Inflow = Outflow
R25	R25(Basin 1)	4	Inflow = Outflow
R26	R26(Basin 1)	3	Inflow = Outflow
RI-RJ	RI-RJ(Basin 1)	5	Inflow = Outflow
RJ-RK	RJ-RK(Basin 1)	5	Inflow = Outflow

Note: not using elevation discharge, initial flow, or invert elevation.

Table A-3

Muskingum Routing Parameters-Don Julio and Magpie Cr

Reach ID	K (hr)	X	# Subreaches
R27	0.18	0.35	5
R28	0.1	0.35	3
R29	0.12	0.35	4
R30	0.12	0.35	4
R32	0.16	0.4	5
R33.2	0.1	0.4	3
R34	0.1	0.4	3
R35	0.31	0.4	5

Table A-4

Muskingum Cunge Routing Parameters-Don Julio, Magpie and Old Magpie Cr-FEMA HMS Model.

Reach ID	Time-step	Length(ft)	Slope (ft/ft)	Manning n	invert(ft)	shape	Diameter (ft)	Width (ft)	Side Slope H/1V	LB Manning n	RB Manning n	Cross Section ID
R31.1	Automatic Fixed Interval	2300	0.0013	0.024		Circle	7.1					
R31.2	Automatic Fixed Interval	1200	0.0025	0.015		Circle	6.9					
R31	Automatic Fixed Interval	3500	0.002	0.03		Eight Point				0.03	0.03	R31(Basin 1)
R31.3	Automatic Fixed Interval	800	0.0001	0.015		Trapezoid		7.1	0			
R33	Automatic Fixed Interval	4550	0.0026	0.015		Trapezoid		4.9	0			
R36	Automatic Fixed Interval	6400	0.0016	0.049		Trapezoid		20	2			
CHA009	Automatic Fixed Interval	7012	0.001	0.02		Trapezoid		15	4			
CHA007	Automatic Fixed Interval	2669	0.001	0.02		Trapezoid		20	4			
CHA020	Automatic Fixed Interval	2436	0.0021	0.04		Trapezoid		15	4			
Reach-1	Automatic Fixed Interval	5565	0.0021	0.04		Trapezoid		10	4			
CHA021	Automatic Fixed Interval	4161	0.001	0.02		Trapezoid		25	4			
CHA023	Automatic Fixed Interval	4327	0.00212	0.02		Trapezoid		22	4			
CHA010	Automatic Fixed Interval	2394	0.001	0.02		Trapezoid		10	4			
CHA011	Automatic Fixed Interval	4623	0.0012	0.02		Trapezoid		12	4			

9.0 Attachment 1 FEMA Region IX Hydrologic Analysis – Magpie Cr, Sacramento County, California.

FEMA Region IX Hydrologic Analysis - Magpie Cr Sacramento County, California

June 2014

CONTRACT NUMBER:

HSFEHQ-09-D-0368 TASK
ORDER HSFE09-10-J-0002

BakerAECOM
An Integrated Production Team

FEMA

Document History

Document Location

Location

Revision History

Version Number	Version Date	Summary of Changes	Team/Author
01	06/03/2011	Initial Submittal	Baker-Sacramento
02	9/11/2011	Second Submittal	Baker-Lakewood
03	6/25/2014	Third Submittal	Baker-Lakewood

Client Distribution

Name	Title/Organization	Location
Eric Simmons	FEMA	MIP, see Appendix C.
		MIP, see Appendix C.

Table of Contents

Appendices

1. Task Summary

1.1. Introduction

Baker-AECOM has completed the Hydrologic Analysis activities in accordance with Task Order 0002 for Sacramento County, California under Contract No. HSFEHQ-09-D-0368. The project location and a detailed map of the county are shown in **Section 1.3**. A description of the Hydrologic Analysis acquisition activities from the Production & Technical Services Statement of Work is shown below.

1.2. Scope of Work

Baker-AECOM was scoped to perform hydrologic analyses for Magpie Cr in Sacramento County, California. The hydrologic study will include the determination of the 10-, 2-, 1-, and 0.2%-annual-chance-exceedance flood peak discharges for a detailed floodplain study of the Magpie Cr area. Effective peak discharges for Magpie Cr are reported in the effective Flood Insurance Study (FIS) for Sacramento County, California Unincorporated Areas dated December 8, 2008 (Reference 1). The effective hydrologic analysis will be modified to include additional drainage areas and flow paths stemming from the main Magpie Cr drainage. The hydraulic analysis for Magpie Cr starts at the confluence with the Natomas East Main Drainage Canal and ends approximately 1 mile upstream of Raley Boulevard for a total of 5 miles. The analysis requires peak discharges and hydrographs upstream and downstream of the Magpie Cr levee near Raley Boulevard in order to support the unsteady state 2D modeling. The flooding sources studied are presented in Table 1.

Table 1: Flooding sources studied

Flooding Source	Reach	Stream Miles
Magpie Cr	From confluence with Don Julio Cr approximately 4,000 feet upstream at Parker Avenue	0.8
Don Julio Cr	From confluence with Magpie Cr approximately 900 feet upstream	0.2
Old Magpie Cr	From lower effective limit of detailed study to divergence of Magpie Cr and Magpie Cr Diversion at levee	3.1

1.3. Project Location: Sacramento County, California

Figure 1: Project Location

2. Methodology

2.1. Processing

The hydrologic analysis was performed in accordance with FEMA's "Guidelines and Specifications for Flood Hazard Mapping Partners" (Reference 2).

QA/QC of this hydrologic analysis was performed internally by Baker-AECOM. All concerns identified in this QA/QC process have been addressed.

2.2. Hydrologic Analysis

The Magpie Cr has its headwaters close to the intersection of Walerga Road and Roseville Road in unincorporated Sacramento County. Magpie Cr flows westerly through the McClellan Air Force

Base where the tributary Don Julio Cr joins Magpie Cr near Raley Boulevard. A diversion channel just downstream of Raley Boulevard diverts flow north to Robla Cr using an earthen levee. West of this diversion channel and levee structure, the historic Magpie Cr overtops the levee and continues southwest through a heavily urbanized area towards U.S. Interstate 80 (I-80) where a smaller tributary combines and finally to Pump station 157 where the flows are pumped over another levee into Natomas East Main Drainage Canal (NEMDC). The historic Magpie Cr flow path shall be studied with unsteady state 2D hydraulic modeling as a "without-levee" scenario because the Magpie Cr Diversion levee does not meet CFR 65.10 requirements.

The entire Magpie Cr watershed is urbanized with residential, industrial, and commercial developments accounting for most of the land use area. Most of the Magpie Cr channel is modified and realigned at several locations and includes many engineered concrete lined trapezoidal sections.

Watershed delineation

The total contributing drainage area for Magpie Cr was determined to be approximately 13 square miles. Detailed 2-foot contours for the study area were obtained from Sacramento County GIS Data Library website (http://www.sacgis.org/GISDataPub/Data/). A digital elevation model (DEM) was developed from these contours. Terrain analysis of the DEM was performed using Arc Hydro Version 1.4 data model for ArcGIS 9 (Reference 3).

The watershed delineation was performed with the help of Arc Hydro tools, which consist of a set of operations to delineate watershed sub-basins, define stream network, and generate hydrologic parameters for these sheds. ArcHydro uses various grid-sampling techniques to calculate these parameters for the defined watershed. The automated routines in ArcHydro produced erratic results in several locations possibly due to highly urbanized and relatively flat nature of the watershed. The sub-basin boundaries were compared with aerial imagery and modified to follow the Magpie Cr channel alignment. The sub-basin boundaries and drainage patterns were not field verified as this was beyond the scope of this study. Area values for the watershed are shown in Table 2 and the resulting watershed delineation for Magpie Cr can be seen in Figure 2. Note that basins DJ10 through DJ 100 as well as M10 through M130 were obtained from the effective HEC-1 hydrologic analysis for Magpie Cr performed by Borcalli and Associates and reused for this study (Reference 1). **Basins WS17 through WS 38 cover the Old Magpie Cr and Interstate 80 (I-80) drainage basins and are unique to this study.**

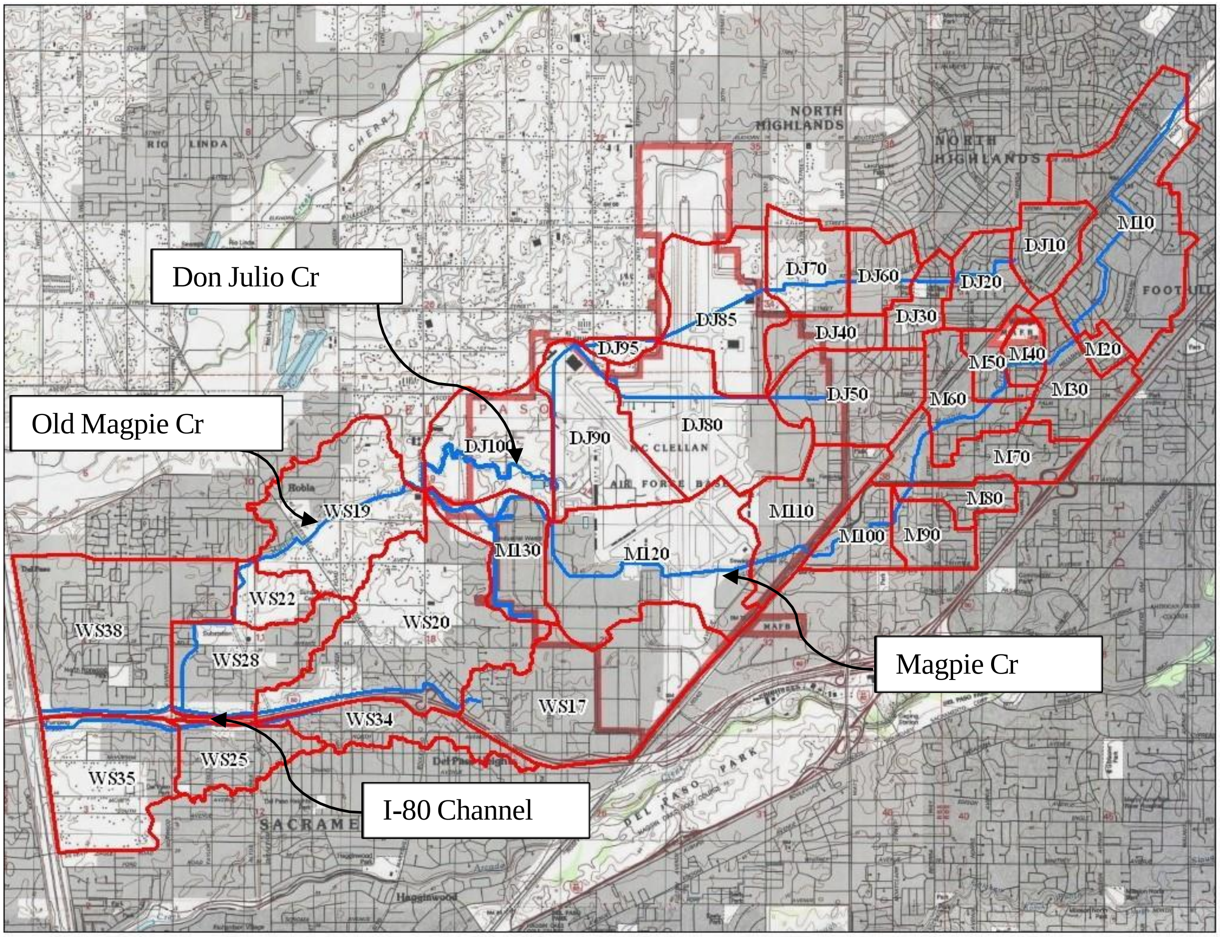

Figure 2: Magpie Cr Sub-Basins

Sub-basin	Contributes To	Area (mi2)
DJ100	Don Julio Cr	0.46
DJ95		0.05
DJ90		0.49
DJ85		0.51
DJ80		0.66
DJ70		0.26
DJ70		0.26
DJ60		0.17
DJ50		0.42
DJ40		0.17
DJ30		0.14
DJ20		0.22
DJ10		0.20
Total	At Confluence with Magpie Cr	4.01
M10	Magpie Cr	0.89
M20		0.05
M30		0.28
M40		0.08
M50		0.12
M60		0.25
M70		0.32
M80		0.11
M90		0.17
M100		0.18
M110		0.39
M120		0.87
M130		0.31
Total	At Confluence with Don Julio Cr	4.02
WS19	Old Magpie Cr	0.66
WS22		0.15
WS28		0.44
WS20	I-80 Channel North	1.02
WS38		0.96
WS17		0.9
WS25	I-80 Channel South	0.26
WS34		0.27
WS35		0.56
Total	Pump Station 157	13.01

Table 2: Sub-basin Drainage Areas (Green from previous study – Orange developed by Baker-AECOM)

Hydrologic model

Along with the Army Corps of Engineers HEC-HMS hydrologic model (Reference 4), the SacCalc hydrologic program developed for Sacramento County was used for the hydrologic analysis of the 10-, 2-, 1-, and 0.2%-annual-chance-exceedance flood events (Reference 5). SacCalc is a preprocessor for developing a USACE HEC-1 file based on the hydrologic criteria specified by the Sacramento County Hydrology Standards (Reference 6). The hydrologic parameters required for SacCalc include transform method, rainfall data, soil data and land use data. The following modeling criteria were used during development of the SacCalc model:

1. Soil Data

The soil data was retrieved from Natural Resources Conservation Service (NRCS) Website. A significant portion of the watershed has been classified as Hydrologic Soil Group D while some areas were not rated by the NRCS in the Soil Survey of Sacramento County (Reference 7). Due to the highly urbanized areas within the watershed, Urban areas were also categorized as Hydrologic Soil Group D for modeling purposes. The soil data boundaries used can be seen in Figure 3.

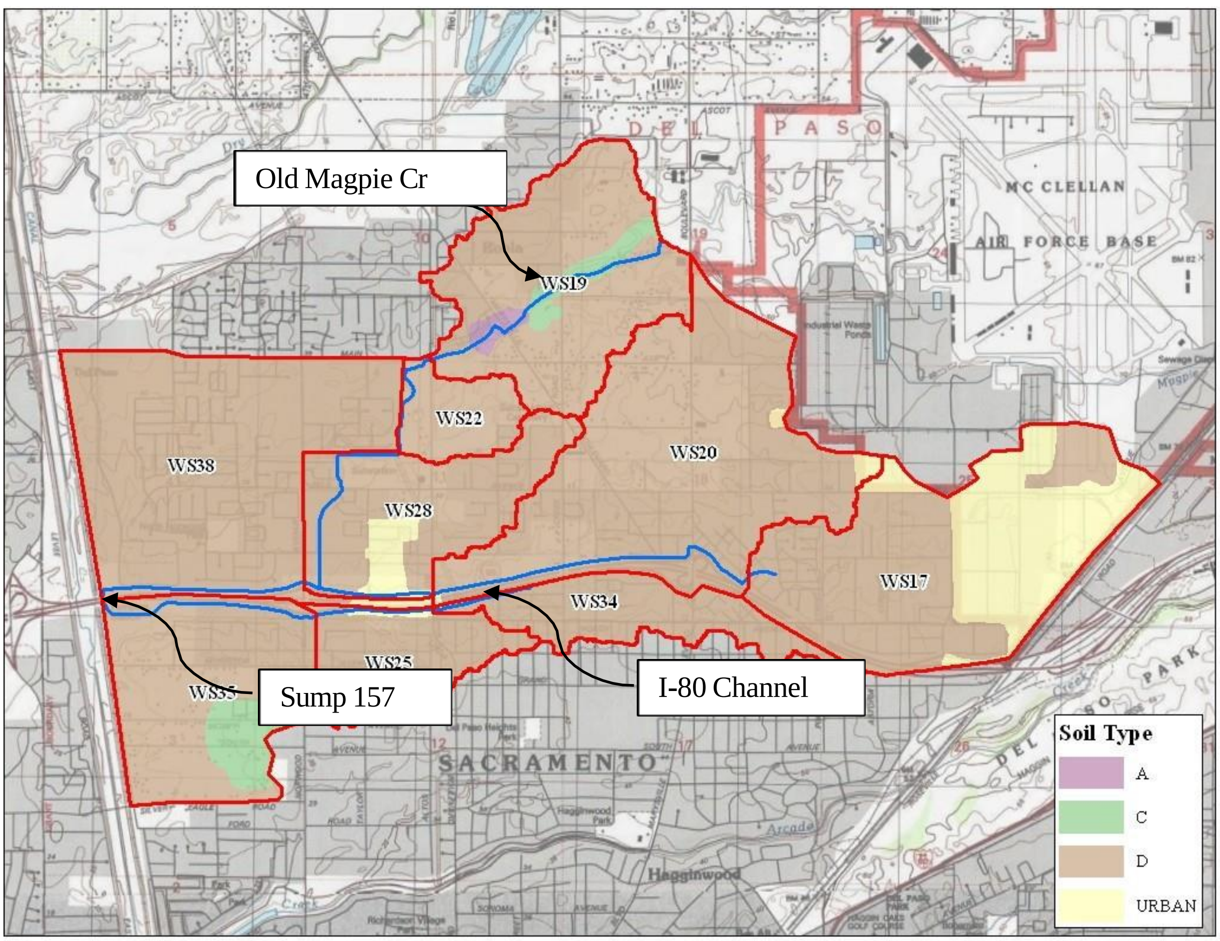

Figure 3: Watershed Soil Types

2. Land use

The georeferenced land use areas were obtained from the 2001 USDA/NRCS National Land Cover Dataset (NLCD) (Reference 8). The land use data boundaries used can be seen in Figure 4.

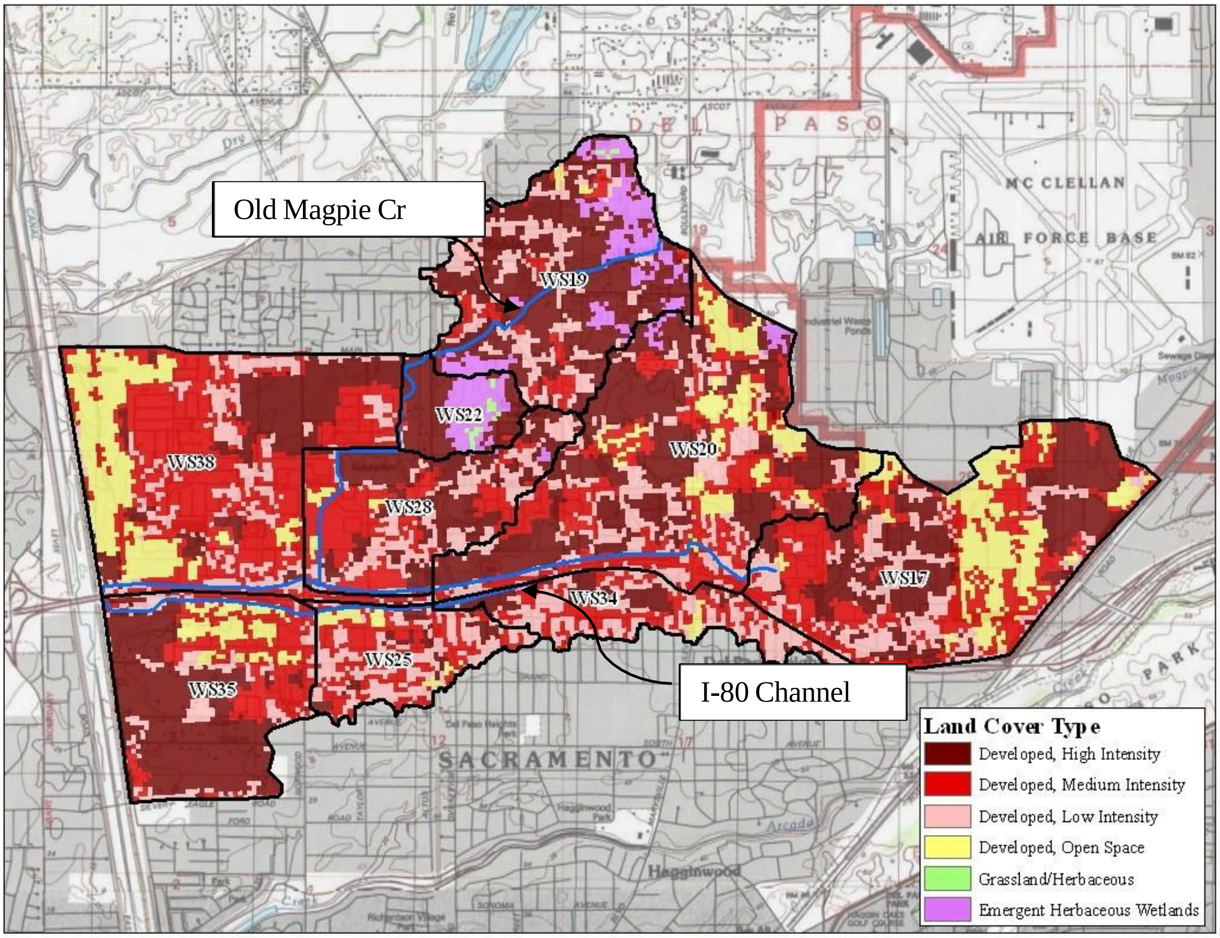

Figure 4: Watershed Land Use

3. Lag time computation

The lag time method specific to the Sacramento City/County Drainage Manual was used to compute lag times (Reference 9). The required parameters for this method include the slope (ft/ft) of the main channel, length of main channel, length to basin centroid, and basin "n" coefficient. The basin "n" value is dependent on the basin land use and the portion of the main drainage course that is channelized. The lag time (L_g) equation for the Sacramento method is:

$$L_g \text{ (minutes)} = Cn(LL_c / S^{0.5})^{0.33}$$

(where C_n is 1560; L is the length of longest watercourse, measured as approximately 90% of the distance from the point of interest to the headwater divide of the basin (miles); L_c is the length along the watercourse measured upstream from the point of interest to a point close to the watershed centroid; S is the overall slope of the longest watercourse between the headwaters and concentration point (ft/mile); and n is the Basin "n" from Table 7-1 of the Sacramento City/County Drainage Manual basined on the basin land use and the condition of the main drainage course).

Sub-basin	10-year lag (min.)	50-year lag (min.)	100-year lag (min.)	500-year lag (min.)
WS19	68.5	72.8	75.0	79.2
WS22	42.6	44.0	44.6	46.0
WS28	38.8	44.3	47.0	52.5
WS20	57.9	64.4	67.6	74.0
WS38	41.3	48.2	51.7	58.5
WS17	51.6	58.8	62.3	69.5
WS25	27.3	31.9	34.1	38.7
WS34	51.7	60.4	64.8	73.5
WS35	52.8	55.8	57.3	60.3

Table 3: Sub-basin Calculated Lag Times

The basin lag time shown in Table 3 varies for each storm frequency because SacCalc applies a lag multiplication factor to the basin “n” for basins with land use densities greater than residential with 1 to 2 dwelling units per acre.

4. Channel routing

The Muskingum-Cunge method was used for channel routing. The Magpie Cr channelized area is primarily concrete lined trapezoidal channel with bottom widths varying from 2- to 18-feet and assumed side slopes of 4H:1V. Manning's "n" values of 0.02 to 0.06 were defined for the channel depending on its type and condition.

5. Precipitation

The entire watershed area falls within Precipitation Zone 2 based on the Sacramento precipitation zone map. The depth-duration-frequency relationship was obtained from the City and County of Sacramento Drainage Manual (Table 4-1) where the 10yr-, 50yr-, 100yr-, and 500yr-depths for the 24 hour event are 2.98, 3.85, 4.25, 5.20 respectively. No elevation adjustments were made because the criteria was no met where the watershed elevation exceeded 100ft-MSL within the Precipitation Zone 3.

6. Loss Rates

The precipitation loss due to infiltration in pervious areas is accounted for in SacCalc by using two parameters, an initial loss depth, and a constant loss rate. The initial loss depth calculated is based on the recurrence interval of the storm studied and is shown in Table 5-1 of the City of Sacramento hydrology standards. The constant loss infiltration rate is based on the infiltration potential of the pervious areas based on the soil type, land use, and vegetation cover. SacCalc calculates the constant loss rate for each sub-basin which can be seen in Table 4.

Sub-basin	Percent Impervious	Infiltration Rate (in/hr)
WS19	21.0	0.07
WS22	13.4	0.07
WS28	32.4	0.07
WS20	43.1	0.063
WS38	49.7	0.065
WS17	46.9	0.062
WS25	48.7	0.065
WS34	36.2	0.07
WS35	32.25	0.065

Table 4: Sub-basin Calculated Percent Impervious and Constant Loss Rate

7. Diversions

In order to model the routing of flows exceeding the capacity of Magpie Cr at both the left bank levee downstream of Don Julio Cr (OLDMG2) and the overbank area upstream of the confluence (OLDMAG), diversions are utilized within the hydrologic model. The rating curves for flow from Magpie Cr to Old Magpie Cr have been developed by Borcalli and Associates are shown in Table 5. **Note that due to limitations within the hydrologic models, the relationship between overflows from Magpie Cr to Old Magpie Cr will be revised within the hydraulic modeling using the existing topographic data available.**

Diversion	Inflow (cfs)	Diverted to Old Magpie Cr (cfs)
OLDMAG	0	0
	250	0
	500	127
	1000	326
	1500	570
	2000	758
	2500	826
OLDMG2	0	0
	500	0
	874	0
	1672	0
	2430	0
	3242	377
	4175	1180

Table 5: Diversion rating curves utilized Borcalli HEC-1 hydrologic model

8. Import into HEC-HMS

As mentioned previously, the SacCalc model was used as a preprocessor to develop the input file for the Army Corps of Engineers (ACOE) HEC-1 hydrologic model. While previous studies including the recent LOMR (11-09-2263P) for Magpie Cr have utilized HEC-1, the software is no longer supported by the ACOE and does not run on modern 64-bit computers. Its replacement, HEC-HMS, is capable of importing HEC-1 data files and running them as intended.

The LOMR (11-09-2263P) for Magpie Cr utilized the effective HEC-1 hydrologic model and modified it to generate hydrologic data points for their area of interest at the McClellan Air Force Base. The HEC-1 data files were then modified by Baker-AECOM as part of this study to incorporate the Old Magpie Cr area by adding the SacCalc generated HEC-1 data into the LOMR data.

Once the merged HEC-1 data files were completed for each of the 10-, 2-, 1-, and 0.2%-annual- chance-events, these files were then imported into the HEC-HMS hydrologic model. Because of issues such as naming convention, node/link relationships, and Roblas Cr basins disconnected from the Magpie Cr watershed, minor cleanup was performed to ensure consistency between the new model and the original intent of the HEC-1 model. The final HEC-HMS schematic of the Magpie Cr, Don Julio Cr, Old Magpie Cr, and I-80 Channels watersheds can be seen in Figure 5.

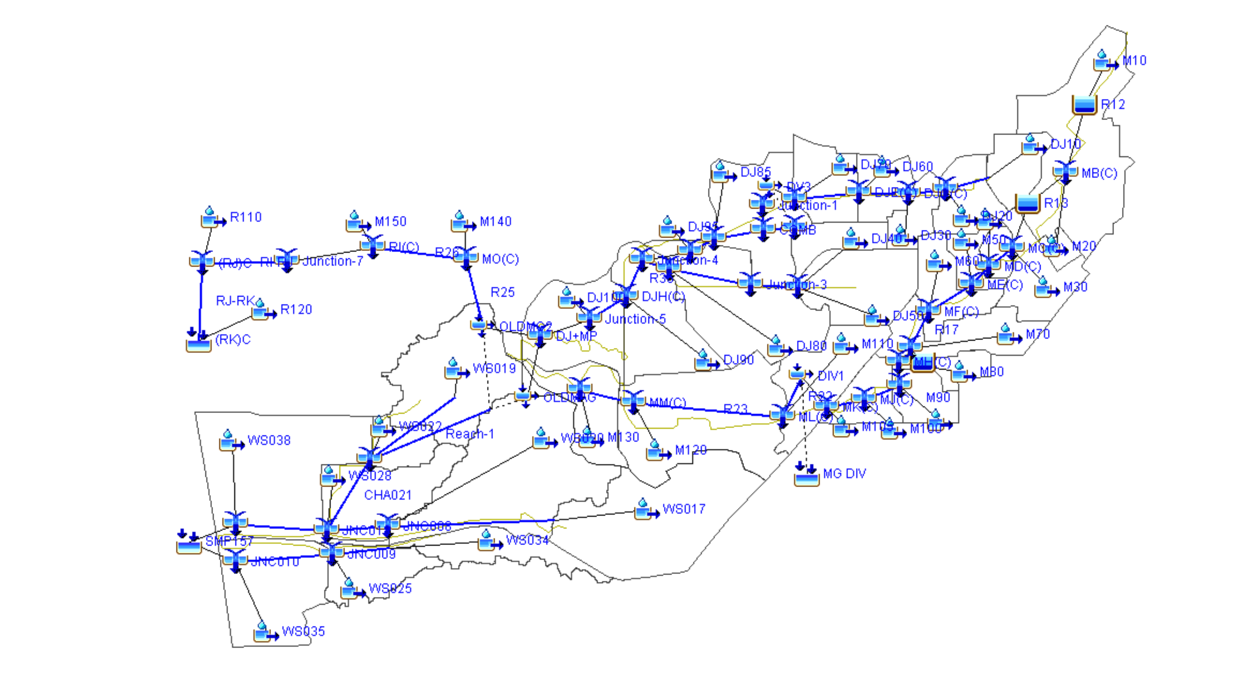

Figure 5: HEC-HMS Watershed Schematic

3. Results and Conclusions

The HEC-HMS hydrologic model allows for the creation and viewing of hydrographs for all elements described within the studied watershed. The peak-flow values for Magpie Cr at the Magpie Cr Diversion just downstream of the confluence with Don Julio Cr somewhat closely match those peak-flow values determined within the effective FIS HEC-1 model shown in Table 6. The calculated hydrograph for Magpie Cr Diversion (R25) can be seen in Figure 6. While the calculated peak discharge of the 50-year, 100-year and 500-year are consistent with the effective discharges, it is noted that the 10-year peak discharges is considerably higher than the tabulated value.

Flooding Source and Location	Drainage Area (Square Miles)	10% Annual-Chance	2% Annual-Chance	1% Annual-Chance	0.2% Annual-Chance
Magpie Cr					
At Southern Pacific Road	2.46	614	663	687	739
At Bailey Loop	2.74	705	804	847	906
Approximately 950 feet downstream of Patrol Road	3.74	716	823	867	969
Magpie Cr Diversion	9.0	750	1,500	1,880	2,400

Table 6: Effective Peak Discharges

The tabulated values for peak discharges along Magpie Cr shown within the effective FIS were generated using an US Army Corp of Engineers HEC-RAS unsteady flow hydraulic model that included channel improvements that still allowed for overflows from Magpie Cr into Old Magpie Cr.
Due to this, comparisons between the LOMR hydrographs and this study are limited to only the location at the diversion at Roseville Road and the SPRR (DIV1). The comparison of the effective hydrograph at DIV1 and that from the HEC-HMS developed as part of this study can be seen in Figure 6. It can be seen that the hydrographs at this location are identical, verifying that the import from the HEC-1 data file into the HEC-HMS hydrologic model is consistent with the effective data.

After validating the HEC-HMS hydrologic model it was necessary to generate hydrographs at several locations along Magpie Cr, Old Magpie Cr, and Interstate 80 Channels to support the unsteady state 2D modeling upstream and downstream of the Magpie Cr levee near Raley Boulevard. The summary of peak discharges for a selection of these locations can be seen in Table 7. These peak discharges and associated hydrographs will be used within the hydraulic modeling to accurately determine the overflow from Magpie Cr into Old Magpie Cr upstream of the Magpie Cr diversion channel. **Again, it is noted that these peak discharges may be revised within the hydraulic modeling based on the detailed methodology used within the analysis.**

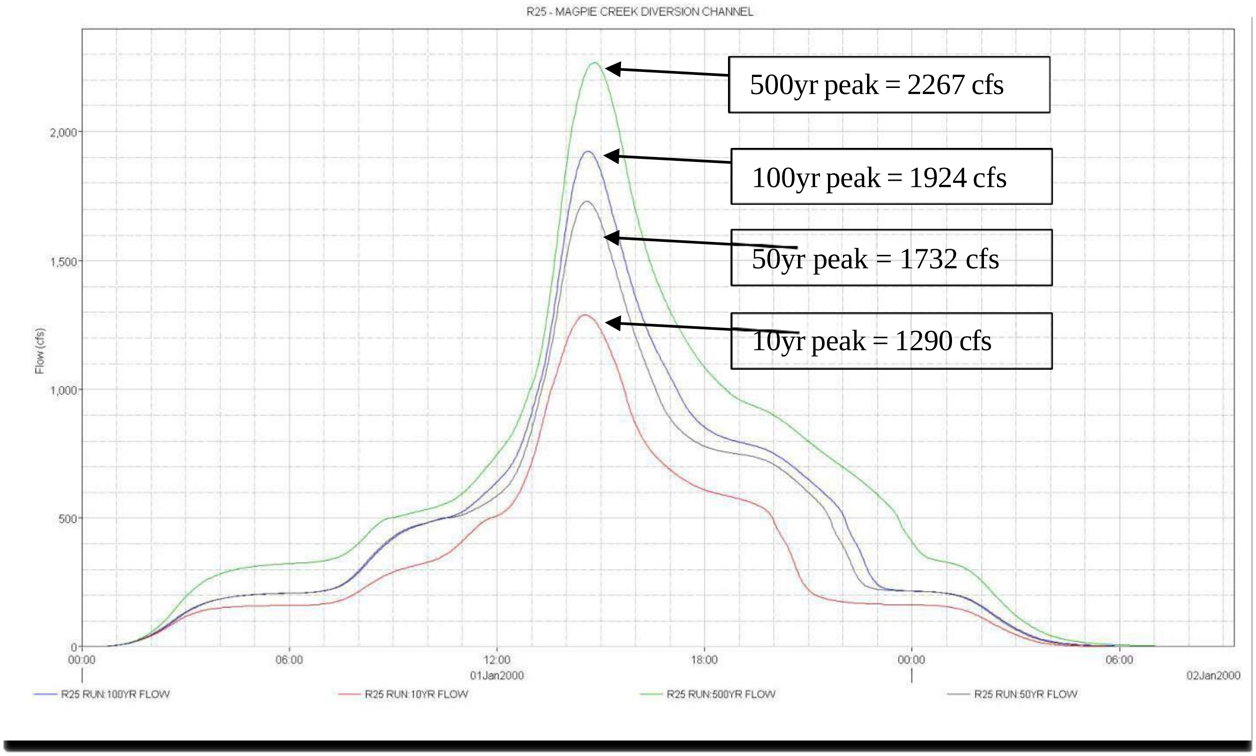

Figure 5: HEC-HMS Watershed Schematic

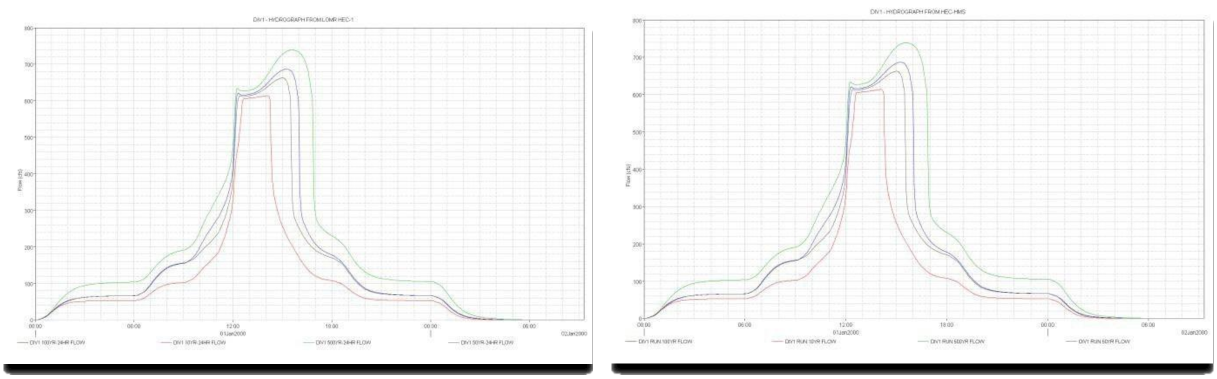

Figure 6: Hydrographs at DIV1 for LOMR HEC-1 (left) and HEC-HMS (right)

Flooding Source and Location	HEC-HMS Node Name	Drainage Area (Square Miles)	10% Annual-Chance	2% Annual-Chance	1% Annual-Chance	0.2% Annual-Chance
Magpie Cr						
At Raley Boulevard	MN_(C)	4.02	565[1]	692[1]	743[1]	864[1]
At Confluence with Don Julio Cr	DJ+MP	8.03	1,459[1]	2,031[1]	2,771[1]	2,826[1]
Old Magpie Cr						
At overflow from Magpie Cr	Reach-1	N/A	153[2]	203[2]	224[2]	348[2]
At Confluence with I-80 Channel North	JNC018	N/A	1,390[2]	1,865[2]	2,080[2]	2,682[2]
I-80 Channel South	JNC010	1.09	533	704	785	966
I-80 Channel North						
Upstream of Confluence with Old Magpie Cr	JNC008	1.92	850	1,104	1,219	1,470
At Confluence with I-80 South	SMP157	N/A	2,314[2]	3,085[2]	3,443[2]	4,264[2]

1. Excluding Overflow
2. Including Overflow from Magpie Cr

4. References

1. Federal Emergency Management Agency, “Flood Insurance Study, Sacramento County, California Unincorporated Areas,” December 8, 2008.
2. Federal Emergency Management Agency, “Guidelines and Specifications for Flood Hazard Mapping Partners,” Appendix C – Guidance on Riverine Flooding Analysis and Mapping, November 2009.
3. ESRI, “ArcGIS,” Version 9.3.1, 2009.
4. US Army Corps of Engineers Hydrologic Engineering Center, “Hydrologic Modeling System – HEC-HMS, Version 3.5” August 2010.
5. Sacramento County Water Resources, “SacCalc – Sacramento County Hydrology Calculator, Version 1.1.0.25” September 30, 2011.
6. US Army Corps of Engineers Hydrologic Engineering Center, “HEC-1 Flood Hydrograph Package User's Manual,” June 1998.
7. United States Department of Agriculture – Soil Conservation Service, “Soil Survey of Sacramento County, California”, 1993
8. United States Department of Agriculture – National Resource Conservation District, “National Land Cover Dataset (NLCD)”, 2001
9. Sacramento County Water Resources, “Hydrology Standards Volume 2,″December 1996.

Appendix A-1

Technical Support Data Notebook Deliverables Checklist

Magpie Cr – Hydrologic Analysis

TSDN CATEGORY	DATA TYPE	DATA SUBMITTED
Engineering Analyses (Hydrologic Analyses)	Hydrologic Analyses Index	X
	Summary Report of Hydrologic Analyses	X
	Computer Models, Calculations, and Execution	X
	Summary Report for Independent QA/QC	X

Appendix A-2

Contact Report List

CONTACT REPORT INDEX		
Community Name and State:	Sacramento County, California	
Community ID No.	060266	
Compiled By:	BakerAECOM	
Date TSDN Submitted:	July 8, 2013	
Report Date	Report Subject	Firm/Agency Contacted

Appendix A-3

Hydrologic Analyses Index

Magpie Cr – Hydrologic Analysis

HYDROLOGIC ANALYSES INDEX				
Community Name:	**Sacramento County, California**			
Community ID No.	**060266**			
Compiled By:	**Baker-AECOM**			
Date TSDN Submitted:	**July 8, 2013**			
Flooding Source/Stream Name	**Hydrologic Method/Model Used**	**Method/Model Analysis Date**	**Exhibit No.**	
			Paper Copy	**Electronic Media**
Magpie Cr	HEC-HMS Version 3.5	July 8, 2013		X
Old Magpie Cr	HEC-HMS Version 3.5	July 8, 2013		X
I-80 Channel North	HEC-HMS Version 3.5	July 8, 2013		X
I-80 Channel South	HEC-HMS Version 3.5	July 8, 2013		X
Don Julio Cr	HEC-HMS Version 3.5	July 8, 2013		X

Appendix A-3

Certification of Compliance

CERTIFICATION OF COMPLIANCE

Project Name:	**Sonoma County, California Hydrologic Analyses**
Statement of Work No.:	**HSFEHQ-09-D-0368 Task Order HSFE09-10-J-0002**
Interagency Agreement No.:	
CTP Agreement No.:	
Certification Date:	**July 8, 2014**

Tasks/Activities Covered by This Certification (Check All That Apply)

☐	**Entire Project**
☐	**Topographic Data Development**
☒	**Hydrologic Analyses**
☐	**Hydraulic Analyses**
☐	**Coastal Flood Hazard Analyses**
☐	**Floodplain Mapping**

This is to certify that the work summarized above was completed in accordance with the statement/agreement cited above and all amendments thereto, together with all such modifications, either written or oral, as the Regional Project Officer and/or Assistance Officer or their representative have directed, as such modifications affect the statement/agreement, and that all such work has been accomplished in accordance with the provisions contained in Guidelines and Specifications for Flood Hazard Mapping Partners cited in the contract document, and in accordance with sound and accepted engineering practices within the contract provisions for respective phases of the work.

Name:	Colin McKernan, P.E.
Title:	Project Manager
Firm/Agency Represented:	Michael Baker Jr., Inc.
Registration No.:	Colorado P.E.39067
Signature:	

This form must be signed by a representative of the firm contracted to perform the work who is registered as a Professional Engineer or by the responsible official of a government agency.

Appendix B-1

Hydrologic Analyses QA/QC Reviews

Appendix C
Digital Data
on the MIP

- J:\R09\CALIFORNIA_06\SACRAMENTO_06067\SACRAMENTO_067C\1 1-09-0865S\SubmissionRepository\Hydrology\
- Correspondence
- General
- Supplemental Information

Attachment 2

TECHNICAL MEMORANDUM

American River Common Features (ARCF) 2016 Project

Magpie Cr

CESPK-ED-HH 4/11/2019

TECHNICAL MEMORANDUM FOR RECORD: American River Common Features (ARCF) 2016 Project, Magpie Cr

SUBJECT: Summary of findings for Magpie Cr Hydrology

1. References
   a. SAFCA & USACE, 2015, American River Watershed Common Features General Reevaluation Report Attachment A Hydrology Report, September 2015
   b. USACE, 2006. Natomas General Reevaluation Report Hydrology Appendix, Natomas Cross Canal and Steelhead Cr Watersheds, Placer, Sacramento, and Sutter Counties, California. October 2006
   c. FEMA, 2014. FEMA Region IX Hydrologic Analysis – Magpie Cr, Sacramento County, California. June 2014
   d. USACE, 2013. Central Valley Hydrology Study: Natomas-area stream group – Pleasant Grove Cr, Dry Cr, and Arcade Cr watersheds hydrologic analysis. March 2013
   e. USACE, 2019. Hydrology Technical Memorandum For Developing WRDA 2016 Water Surface Profiles.
   f. Sacramento City/County Drainage Manual, Volume 2, Hydrology Standards. Sacramento County Public Works Agency, Department of District Engineering, Water Resource Division. City of Sacramento Department of Utilities and Public Works, Engineering Division. December 1996. Available at <http://www.waterresources.saccounty.net/Pages/DrainageManualVolume2.aspx>

2. Purpose: The purpose of this document is to compile, describe, and compare three hydrologic datasets developed since 2006 for Natomas basin and its eastside tributaries with an emphasis on Magpie Cr. Federal levees located on Magpie Cr are authorized for improvements to reduce flood risk under ARCF 2016. USACE and the City of Sacramento are evaluating the existing hydrology studies in the study area with the aim to adopt one for final design. This document recommends using 2014 FEMA hydrology (FEMA, 2014) for Magpie Cr given the higher subbasin resolution and relatively similar results compared to the 2015 GRR (USACE, 2015) and 2019 CVHS (USACE, 2019) study estimates for the index point on Magpie Diversion above Robla Cr. This project is authorized by ARCF 2016 and supports coordination efforts with Sacramento County for Magpie Cr to assess and reduce flood risk.

3. Summary of Hydrology

   a. Natomas General Reevaluation Report & American River General Reevaluation Report

      The Natomas study computed 50-, 20-, 10-, 4-, 2, 1-, 0.5-, and 0.2% annual chance exceedance (ACE) hydrographs along several index points for the Natomas Cross Canal and Steelhead Cr tributaries. The hydrographs would be used to develop stage- frequency relationships between the Sacramento River, American River, Natomas Cross Canal, and Steelhead Cr. These hydrographs were termed the “8-Flood Series” and followed the Sacramento method documented in the Sacramento City/Sacramento County Hydrology Standards Drainage Manual. The 10-day rainfall depth and temporal distribution were adopted from the Sacramento method. This study focused on developing 10-day volumes rather than peak flows. Volume was determined to be most critical to estimating stages-frequencies and is also consistent with the Comprehensive Study hydrology. Two storm centerings were developed: one centered on the five Cross Canal tributaries and the other centered on the Steelhead Cr tributaries (Magpie Cr is on the Steelhead Centering). The first storm area covered 288 square miles with the highest intensities along Coon Cr and Auburn Ravine subbasins, while the second storm area covered 217 square miles with the highest intensities above Dry Cr subbasins with elevations greater than 300 feet. Area reduction was applied to these storm areas using NOAA Atlas 2 adjustments as well as an elevation adjustment.

The Common Features GRR study adopted most of the Natomas GRR hydrology results but made adjustments to the hydrographs at index locations listed in the Table 1 below. Hydrographs at those index locations were revised using a balanced hydrograph approach. The New Year 1997 pattern was scaled to match the 5-day and 10-day duration estimates developed in the Natomas GRR. The hydrograph pattern development followed the Comprehensive Study methodology, which consisted of six 5- day waves with waves 3 and 4 being the two largest waves. For the eastside tributary flows, waves 1-3, and 5 were assumed to be minor and given zero runoff. Magpie Div. above Robla Cr (At Mouth) index location represents flow at Magpie Cr.

Table 1: Index Locations (USACE, 2015)

List of Locations for Balanced Synthetic 8-Flood Series Hydrographs
Provided to Hydraulic Design Section

Subbasin #	Subbasin or Index Pt. Location	D.A. (sq mi)
Dry Creek:		
511140	Dry Cr. At Sacramento-Placer County Line	88.58
512320	Sierra Cr. At Mouth	3.00
512110	Dry Cr. Local at Q Street	5.74
591010	Robla Cr. At Mouth	5.70
591011	Magpie Div. above Robla Cr.	8.90
510930	Dry Cr. Local at Rio Linda Blvd.	2.59
590620	Dry Cr. Local at NEMDC	1.97
590620	Dry Cr. Total Flow at NEMDC	116.48
Arcade Creek:		
HC15	Arcade Cr nr Del Paso Heights Gage	31.83
40	Del Paso Park Subbasin	1.91
50	North Town & Country Subbas	1.81
60	Interior Drainage above Pump 103	1.51
64	Water from Pump 103	1.51
70	Interior Drainage above Pump 159	1.22
72	Water from Pump 159	1.22
80	Interior Drainage above Pump 158	0.78
82	Water from Pump 158	0.78
90	Interior Drainage above Pump 154	1.08
92	Water from Pump 154	1.08
92C	Arcade Cr. Total Flow at NEMDC	40.14

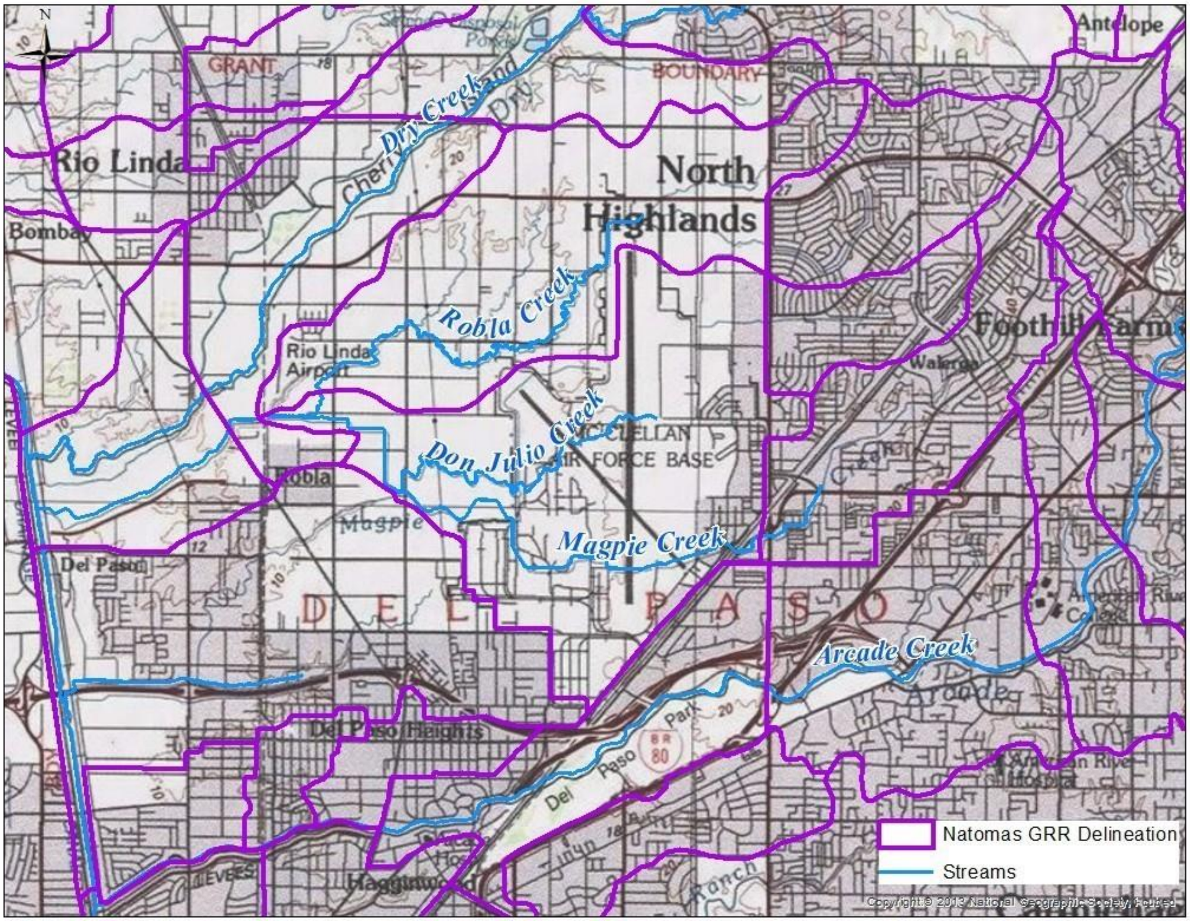

Figure 1: 2015 GRR Delineation

b. FEMA Region IX Hydrologic Analysis – Magpie Cr Sacramento County, California This study developed hydrographs for Magpie Cr for the 10-, 2-, 1-, and 0.2% ACE floods. The rainfall-runoff model was updated from a previous HEC-1 model, developed by Borcalli & Associates Inc. (termed the “effective” model). The update included nine additional subbasins for a total of 34 subbasins (26 subbasins above the confluence of Magpie Cr and Don Julio). HEC-HMS and SacCalc, a hydrologic program developed for Sacramento County, was used to develop the 10-, 2-, 1-, and 0.2% ACE floods. The SacCalc program is a preprocessor that follows the hydrologic criteria specified by the Sacramento County Drainage Manual. The major goal of this study was to maximize the instantaneous peak flow. To maximize the peak flow, a 24-hr duration storm event was selected for developing % ACE hydrographs and 24-hour depths were used for the storm. The storm area of 13.1 square miles was centered over the Magpie Cr. Precipitation depth-duration-frequency values were obtained from the Downtown Sacramento rainfall gage location. No adjustments were made for rainfall depths based on elevation; however, area reduction was applied using a factor of 0.96.

Following the Hydrology Standards Drainage Manual, the unit hydrograph method uses the U.S. Bureau of Reclamation dimensionless unit hydrograph which requires computing a basin lag (computed in SacCalc). Loss rates were calculated in SacCalc by taking into account the soil type, land use, and vegetation cover. No calibration or validation was mentioned in this study, and it is unclear whether the Effective HEC-1 model was calibrated; however, model parameters are not far off from the other rainfall-runoff models.

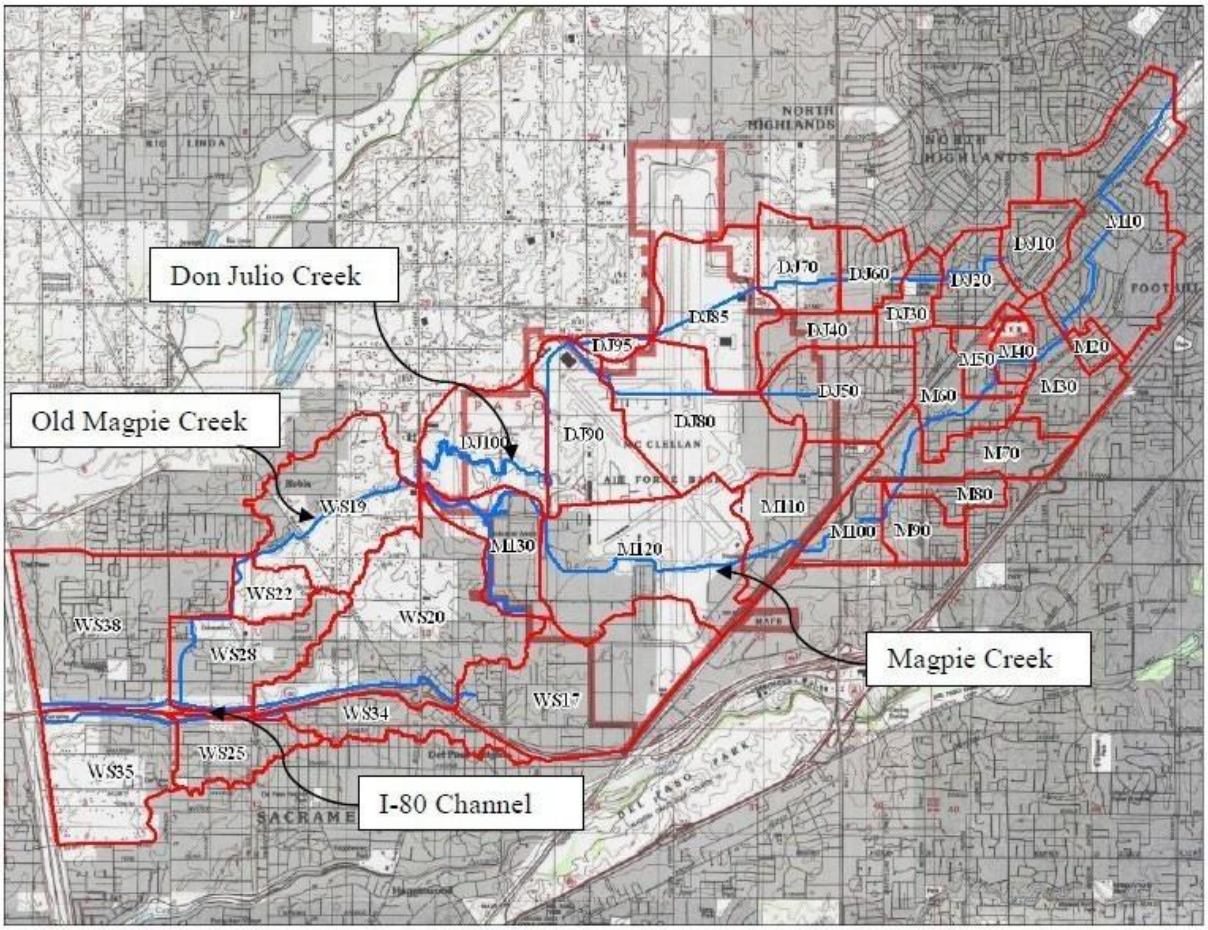

Figure 2: 2014 FEMA Magpie Cr Watershed Delineation

c. Central Valley Hydrology Study – Natomas-Area Stream Group – Pleasant Grove Cr, Dry Cr, and Arcade Cr Watersheds Hydrologic Analysis

The Natomas basin hydrology was developed for the Central Valley Hydrology Study (CVHS). The goal of CVHS was to develop flood flow frequency relationships at analysis points along California's Central Valley. Several of these analysis points were developed for the Natomas area; three along Steelhead Cr, one along Dry Cr, one along Arcade Cr, and four along Pleasant Grove. One more analysis point was added at the confluence of Magpie Cr and Robla Cr in 2019. A storm centering was developed for each of the analysis locations. HEC-HMS was used as the rainfall-runoff model to compute ACE hydrographs at the analysis points. Similar to the Natomas GRR, the model domain extended beyond Magpie Cr and covered Pleasant Grove Cr and Steelhead Cr basins. For Magpie Cr, two subbasins were developed at the confluence of Magpie Cr and Robla Cr (one for Magpie and one for Robla).

Rainfall inputs used NOAA Atlas 14 precipitation-frequency depths to produce 50-, 20-, 4-, 10-, 2-, 1-, 0.5-, and 0.2% ACE hydrographs. Rainfall precipitation-frequency depths were obtained for durations 15-min to 10-days. Temporal distribution used HEC-HMS's default pyramid shaped rainfall pattern out to 10-days. The HEC-HMS model loss rates and basin lag times were calibrated to frequency curves at two discharge gages locations: Dry Cr at Vernon Street (USGS #11447293) and Arcade Cr near Del Paso Heights (USGS 11447360). The model was calibrated to the peak flow frequency curve at these locations.

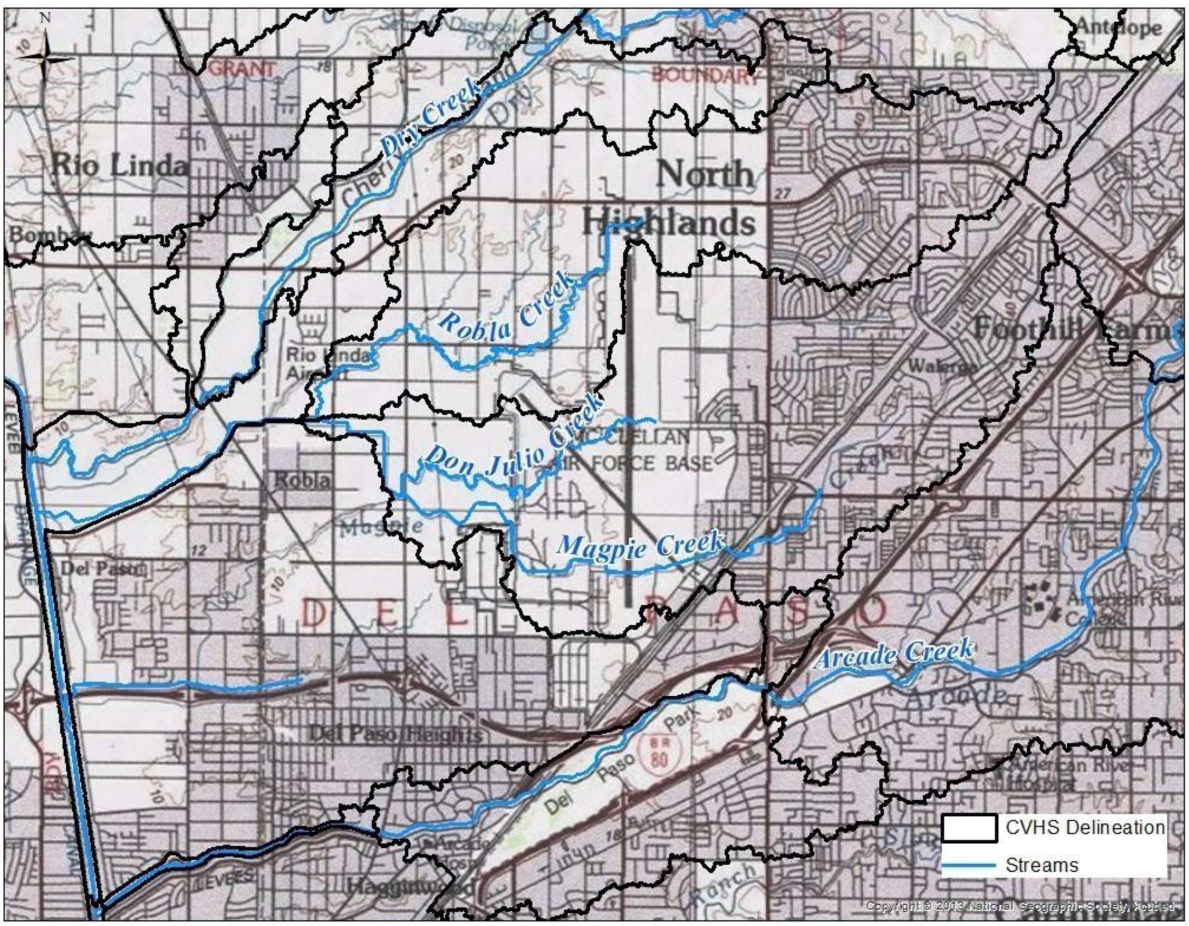

Figure 3: 2019 CVHS Natomas Basin Eastside Tributaries Watershed Delineation

4. Findings

   a. The three hydrology study methods, assumptions, and results are technically reasonable but have different purposes and level of details.
   b. The 2014 FEMA focuses the hydrology on Magpie Cr. The watershed has a higher subbasin resolution which provides hydrographs at more locations within Magpie Cr basin. 2019 CVHS and 2015 GRR study analyzes the Natomas basin and eastside tributaries holistically, though these studies have limited pour point locations. 2019 CVHS only has one pour point location that is downstream of the confluence of Magpie Cr and Don Julio, while 2015 GRR has three subbasins above a similar location.
      i. 2015 GRR study did estimate a hydrograph for Magpie Cr at Patrol Road and Don Julio Cr at Patrol Road by performing an adjustment. A factor of 0.47575 and 0.505777 was applied to Magpie Cr at Mouth to estimate flows for Magpie Cr at Patrol and Don Julio Cr at Patrol Road, respectively.
   c. Given the differences in subbasin delineation, only one index location can be reasonably compared between the three studies at Magpie Cr & Don Julio.
      i. The 2014 FEMA computed peak flow at the confluence of Magpie Cr and Don Julio Cr is higher than the other two studies but a lower 24-hr maximum flow (Figure 4)

Magpie Diversion above Robla Cr

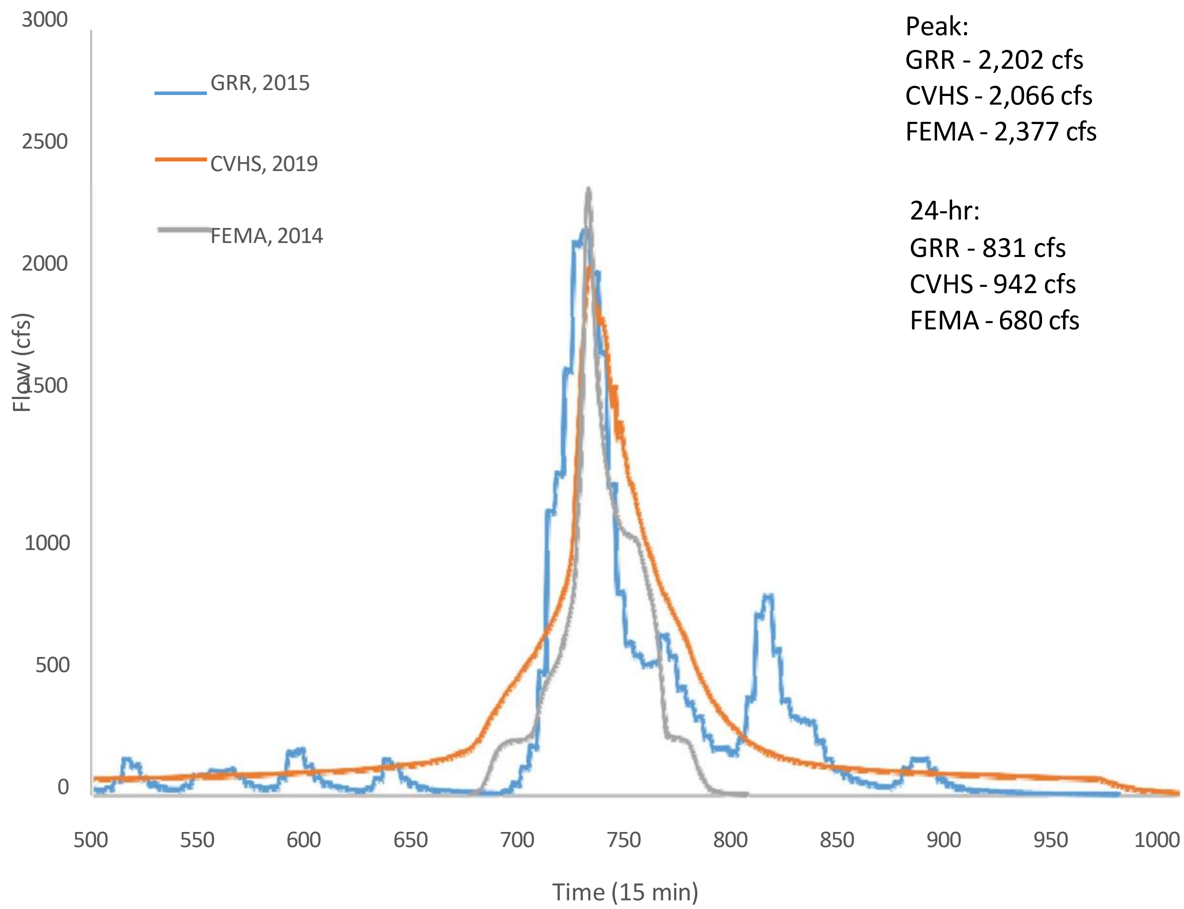

Figure 4: Magpie Cr Diversion above Robla Cr. Also known as "Magpie Cr at Mouth" where Magpie Cr and Don Julio converge

d. A comparison among the three datasets for Magpie Cr at Patrol Road and Don Julio Cr at Patrol Road are shown in Figure 5 and Figure 6. In the 2015 GRR, the hydrograph at Magpie Diversion above Robla Cr was multiplied by a drainage area adjustment to estimate the hydrographs at Patrol Road. However, due to land-use differences in each tributary, it was determined that drainage area alone is not the best indicator of the relative contributions. Instead, USACE determined that the highly detailed 2014 FEMA model (has detailed subbasins for each Cr) was a better indicator of the relative contribution from Don Julio and Magpie Cr. As such, the 2019 CVHS hydrographs were obtained by scaling the hydrograph at the confluence of Magpie Cr and Don Julio (Figure 4) by 0.33 (Magpie) and 0.76 (Don Julio).

Peak flow at Confluence = 2,377 cfs
Peak flow at Magpie@Patrol Road = 789 cfs, 787/2,377 = 0.33
Peak flow at DonJulio@Patrol Road = 1,808 cfs, 1,808/2,377 =0.76

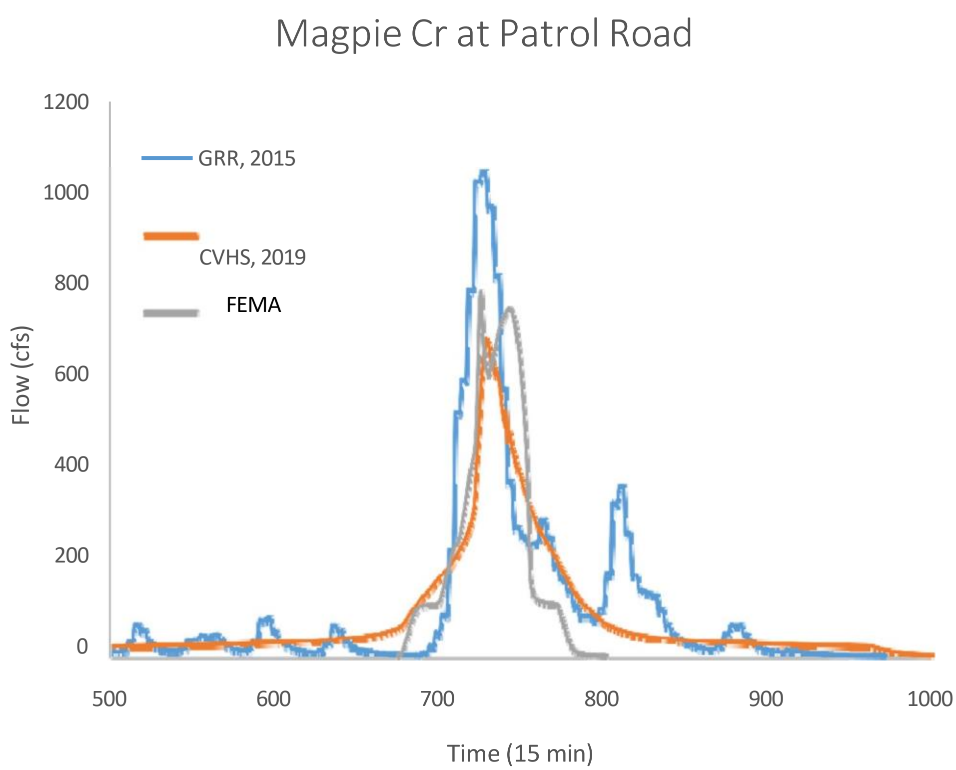

Figure 5: Magpie Cr at Patrol Road

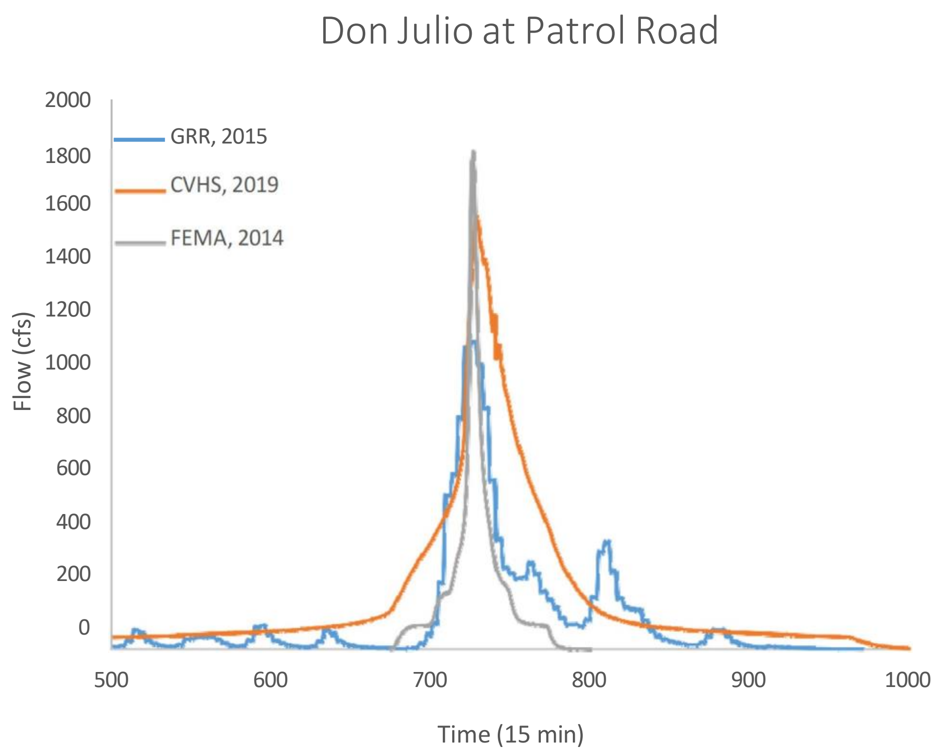

Figure 6: Don Julio Cr at Patrol Road

e. Other major differences between studies are the precipitation-frequency rainfall depths (NWS Sac gage vs NOAA Atlas 14), storm centering methodology (centering over Steelhead Cr vs. over Magpie Cr), and duration of hydrographs (24 hour vs 10 day).

   Sacramento Drainage Manual design storms are based on a NWS Sacramento gage while USACE 2019 is based on NOAA Atlas 14. NOAA Atlas 14 is a more recent product from NOAA. USACE further researched the precipitation differences in the two studies. First, the "lag" (time between the center of mass of the storm precipitation and the peak flow at an index point) was evaluated for the FEMA model. The lag was estimated at 1.5 hours based on an index point downstream of the confluence of Magpie and Don Julio Cr. Based on lag, it is postulated that shorter duration precipitation depths (i.e., the maximum 1-, 2-, and 3-hour depths) in the storm are having the biggest influence on peak flows on lower Magpie Cr. USACE then compared the short duration depths used in the 2014 FEMA Study versus 2019 USACE Study. The 1% ACE event is a critical event for the design of the Magpie Cr federal levee improvement. The 2019 USACE Study storm depths are based on taking NOAA 14 point precipitation depths for the study area and applying areal reduction factors for 14 square miles. The comparisons are shown below.

Table 2. Comparison of Short-Duration 1% ACE Precipitation Frequency

Precipitation Depth Duration	2014 FEMA HMS Model 1% ACE Storm (inches)	2019 USACE HMS Model 1% ACE Storm (inches)	Ratio (FEMA/USACE)
1-Hour	1.20	1.17	1.03
2-Hour	1.50	1.54	.97
3-Hour	1.74	1.86	.94

Table 2 shows the short-duration depths from the two studies are quite similar. As such, it is likely that if the FEMA 2014 model used a fully balanced NOAA Atlas 14 precipitation-frequency based design storm, their model would produce similar peak flows on Magpie Cr in their HMS model compared to their existing results based on NWS Sacramento gage precipitation-frequency.

Note: The Sacramento County 24-hour storm pattern is scaled by the 24-hour depth duration frequency value found in NWS Sacramento gage. The resulting design storm is similar to a fully balanced design storm in which all durations match the 1-hour to 24 hour depths found in NWS Sacramento gage. While the 24-hour depth increased significantly between NOAA Atlas 14 and NWS Sacramento gage (5.35 inches and 4.25 inches, respectively), the ratio between short duration depths and the 24-hour depth also changed (decreased). As such, if Sacramento County did adopt NOAA Atlas 14, the 24-hour storm pattern would be adjusted as well.

f. Modeling methods are similar among the three watersheds that utilize the Sacramento City/County Hydrology Standards Drainage Manual.
g. Common Features 2015 GRR and 2019 CVHS provides hydrographs outside of Magpie Cr which may be useful for coincident flow analysis.

5. Recommendation

USACE recommends using the 2014 FEMA hydrologic dataset for Magpie Cr. The development of the hydrology is reasonable and follows Sacramento County/City Drainage Manual guidance. The peak flows between three datasets are not significantly different from each other and 2014 FEMA results tend to be higher than the 2019 CVHS results. Backwater along Magpie Cr and Don Julio is not a concern and hydrology does not need to consider coincident flows on other tributaries such as Robla Cr. The main advantage of this hydrology dataset is that it has a greater subbasin resolution and provides % ACE hydrographs at Don Julio at Patrol Road and Magpie Cr at Patrol Road without additional adjustments. These are necessary handoff locations for the hydraulic model to evaluate levee raise. In order to verify USACE's analysis, it is suggested that the maximum 24-hour rainfall found in the 2019 USACE HMS Model be input into the 2014 FEMA model and the peak flow on lower Magpie Cr be evaluated against the original FEMA model run. If the results are similar, then the USACE recommendation is validated.

Table 3: Rainfall-runoff Study Comparison

Study	Calibrated Model	Model Domain	DQC	ATR	Precip-Frequency depths	Hydrograph Duration	Land use
2006 Natomas GRR, /2015 American R. Common Features GRR (USACE, 2006, SAFCA & USACE, 2015)	Yes	Steelhead & Pleasant Grove Cr	Yes	Yes	NWS Sac	10 days	Obtained from Loomis, Rocklin, Roseville, Placer, Sacramento, and Sutter
2014 FEMA	No	Magpie Cr basin	FEMA Approved	FEMA Approved	NWS Sac	1 day	2001 USACE/NRCS
2019 CVHS (USACE, 2013, 2019)	Yes	Steelhead & Pleasant Grove Cr	Yes	Yes	NOAA Atlas 14	10 days	2001 NLCD

Study	Modeling Method	# Subbasins for Magpie	Unit Hydrograph Transform	Loss rate (in/hr)	Depth-Area-Adjustment	1% ACE Peak flow at Magpie Cr Div abv Robla (cfs)	1% ACE 24-hour max flow at Magpie Cr Div abv Robla (cfs)
2006 Natomas GRR, /2015 American R. Common Features, 2015 (USACE, 2006, SAFCA & USACE, 2015)	HEC-1	3	LA S-Graph	0.1	NOAA Atlas 2	2,200	831
2014 FEMA	HEC-1/HEC-HMS	34	USBR urban unit hydrograph	0.06-0.07	NOAA Atlas 2	2,380[1]	680[1]
2019 CVHS (USACE, 2013, 2019)	HEC-HMS	1	LA S-Graph	0.06	TP-40	2,070	941

[1]Added Junction “MN (C)” and “Junction-5” from the HEC-HMS model

Table 4: Precipitation-Frequency Depths developed by NWS. Location at downtown Sacramento, CA.

Duration	Frequency, years							
	2	5	10	25	50	100	200	500
5 min	0.13	0.20	0.25	0.32	0.38	0.44	0.49	0.58
10 min	0.19	0.29	0.36	0.46	0.54	0.62	0.70	0.82
15 min	0.23	0.35	0.43	0.55	0.64	0.73	0.82	0.96
30 min	0.32	0.47	0.57	0.72	0.83	0.94	1.04	1.22
1 hour	0.45	0.64	0.77	0.94	1.07	1.21	1.33	1.53
2 hours	0.64	0.88	1.04	1.26	1.42	1.59	1.76	2.00
3 hours	0.77	1.04	1.23	1.47	1.66	1.85	2.03	2.31
6 hours	1.06	1.40	1.65	1.95	2.22	2.50	2.75	3.10
12 hours	1.43	1.91	2.25	2.67	3.00	3.30	3.60	4.00
24 hours	1.90	2.50	2.98	3.46	3.85	4.25	4.60	5.20
36 hours	2.25	3.02	3.54	4.15	4.60	5.09	5.53	6.24
2 days	2.51	3.40	3.95	4.65	5.15	5.70	6.20	7.00
3 days	3.00	4.07	4.65	5.50	6.20	6.80	7.50	8.40
5 days	3.61	4.91	5.76	6.85	7.63	8.42	9.20	10.29
10 days	4.73	6.44	7.54	8.96	9.97	11.01	11.95	13.45

[1]Obtained from Sacramento City/County Drainage Manual - Chapter 4 Precipitation

Table 5: Precipitation-Frequency depths from NOAA Atlas 14 Location at Sacramento 5 ESE

AMS-based precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Annual exceedance probability (1/years)								
	1/2	1/5	1/10	1/25	1/50	1/100	1/200	1/500	1/1000
5-min	**0.132** (0.118-0.150)	**0.182** (0.161-0.207)	**0.219** (0.192-0.253)	**0.273** (0.228-0.330)	**0.319** (0.259-0.398)	**0.371** (0.291-0.478)	**0.428** (0.323-0.574)	**0.609** (0.435-0.863)	**0.816** (0.555-1.21)
10-min	**0.189** (0.169-0.215)	**0.261** (0.231-0.297)	**0.314** (0.276-0.362)	**0.392** (0.327-0.474)	**0.458** (0.371-0.570)	**0.531** (0.417-0.685)	**0.614** (0.463-0.822)	**0.873** (0.623-1.24)	**1.17** (0.796-1.73)
15-min	**0.229** (0.204-0.260)	**0.316** (0.280-0.360)	**0.380** (0.333-0.438)	**0.474** (0.396-0.573)	**0.554** (0.449-0.689)	**0.643** (0.504-0.828)	**0.743** (0.560-0.994)	**1.06** (0.753-1.50)	**1.41** (0.963-2.10)
30-min	**0.314** (0.279-0.356)	**0.432** (0.383-0.492)	**0.520** (0.456-0.599)	**0.648** (0.542-0.784)	**0.758** (0.614-0.943)	**0.880** (0.689-1.13)	**1.02** (0.767-1.36)	**1.45** (1.03-2.05)	**1.94** (1.32-2.87)
60-min	**0.440** (0.392-0.500)	**0.607** (0.538-0.691)	**0.730** (0.641-0.841)	**0.911** (0.761-1.10)	**1.06** (0.863-1.33)	**1.24** (0.968-1.59)	**1.43** (1.08-1.91)	**2.03** (1.45-2.88)	**2.72** (1.85-4.03)
2-hr	**0.648** (0.577-0.736)	**0.868** (0.770-0.989)	**1.02** (0.897-1.18)	**1.24** (1.03-1.50)	**1.42** (1.15-1.76)	**1.61** (1.26-2.07)	**1.81** (1.37-2.42)	**2.11** (1.50-2.99)	**2.74** (1.87-4.07)
3-hr	**0.803** (0.714-0.912)	**1.07** (0.946-1.22)	**1.25** (1.10-1.44)	**1.50** (1.25-1.81)	**1.70** (1.38-2.12)	**1.92** (1.50-2.47)	**2.14** (1.62-2.87)	**2.47** (1.76-3.50)	**2.77** (1.89-4.11)
6-hr	**1.09** (0.969-1.24)	**1.45** (1.29-1.65)	**1.69** (1.49-1.95)	**2.02** (1.69-2.44)	**2.28** (1.85-2.84)	**2.54** (1.99-3.28)	**2.82** (2.13-3.78)	**3.22** (2.29-4.56)	**3.53** (2.40-5.24)
12-hr	**1.44** (1.28-1.63)	**1.99** (1.77-2.27)	**2.37** (2.08-2.73)	**2.89** (2.41-3.49)	**3.30** (2.67-4.10)	**3.72** (2.92-4.80)	**4.17** (3.15-5.59)	**4.81** (3.43-6.81)	**5.32** (3.62-7.89)
24-hr	**1.90** (1.73-2.12)	**2.75** (2.50-3.08)	**3.32** (3.00-3.75)	**4.10** (3.59-4.77)	**4.71** (4.05-5.59)	**5.35** (4.50-6.49)	**6.02** (4.94-7.49)	**6.97** (5.51-9.00)	**7.73** (5.92-10.3)
2-day	**2.45** (2.23-2.75)	**3.48** (3.16-3.90)	**4.14** (3.74-4.68)	**5.00** (4.38-5.83)	**5.66** (4.87-6.72)	**6.33** (5.32-7.68)	**7.02** (5.75-8.73)	**7.94** (6.28-10.3)	**8.66** (6.64-11.5)
3-day	**2.83** (2.58-3.16)	**3.94** (3.59-4.42)	**4.65** (4.20-5.26)	**5.56** (4.87-6.48)	**6.24** (5.37-7.41)	**6.93** (5.82-8.40)	**7.61** (6.24-9.47)	**8.53** (6.74-11.0)	**9.23** (7.07-12.3)
4-day	**3.12** (2.84-3.49)	**4.33** (3.94-4.86)	**5.08** (4.59-5.74)	**6.04** (5.29-7.03)	**6.74** (5.80-8.00)	**7.44** (6.26-9.03)	**8.14** (6.67-10.1)	**9.06** (7.15-11.7)	**9.75** (7.47-13.0)
7-day	**3.82** (3.48-4.27)	**5.30** (4.82-5.95)	**6.19** (5.59-7.00)	**7.29** (6.39-8.49)	**8.08** (6.94-9.59)	**8.84** (7.43-10.7)	**9.58** (7.86-11.9)	**10.5** (8.32-13.6)	**11.2** (8.60-15.0)
10-day	**4.29** (3.91-4.81)	**5.98** (5.44-6.71)	**6.98** (6.31-7.89)	**8.19** (7.17-9.53)	**9.04** (7.77-10.7)	**9.85** (8.29-12.0)	**10.6** (8.72-13.2)	**11.6** (9.18-15.0)	**12.3** (9.44-16.4)
20-day	**5.51** (5.02-6.17)	**7.75** (7.05-8.70)	**9.05** (8.18-10.2)	**10.6** (9.28-12.3)	**11.7** (10.0-13.9)	**12.7** (10.7-15.4)	**13.6** (11.2-17.0)	**14.8** (11.7-19.2)	**15.7** (12.0-20.9)
30-day	**6.63** (6.04-7.42)	**9.36** (8.51-10.5)	**10.9** (9.88-12.4)	**12.8** (11.2-14.9)	**14.1** (12.2-16.8)	**15.4** (12.9-18.7)	**16.5** (13.6-20.6)	**18.0** (14.2-23.2)	**19.0** (14.6-25.4)
45-day	**8.05** (7.34-9.02)	**11.4** (10.3-12.8)	**13.3** (12.0-15.0)	**15.6** (13.7-18.2)	**17.2** (14.8-20.4)	**18.8** (15.8-22.8)	**20.2** (16.6-25.2)	**22.0** (17.4-28.5)	**23.3** (17.9-31.1)
60-day	**9.54** (8.69-10.7)	**13.4** (12.2-15.1)	**15.7** (14.2-17.7)	**18.4** (16.1-21.5)	**20.4** (17.5-24.2)	**22.2** (18.7-26.9)	**23.9** (19.6-29.8)	**26.1** (20.7-33.8)	**27.7** (21.2-37.0)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of annual maxima series (AMS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and annual exceedance probability) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

[1]Obtained from <https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html>

APPENDIX C

HYDRAULIC ANALYSIS

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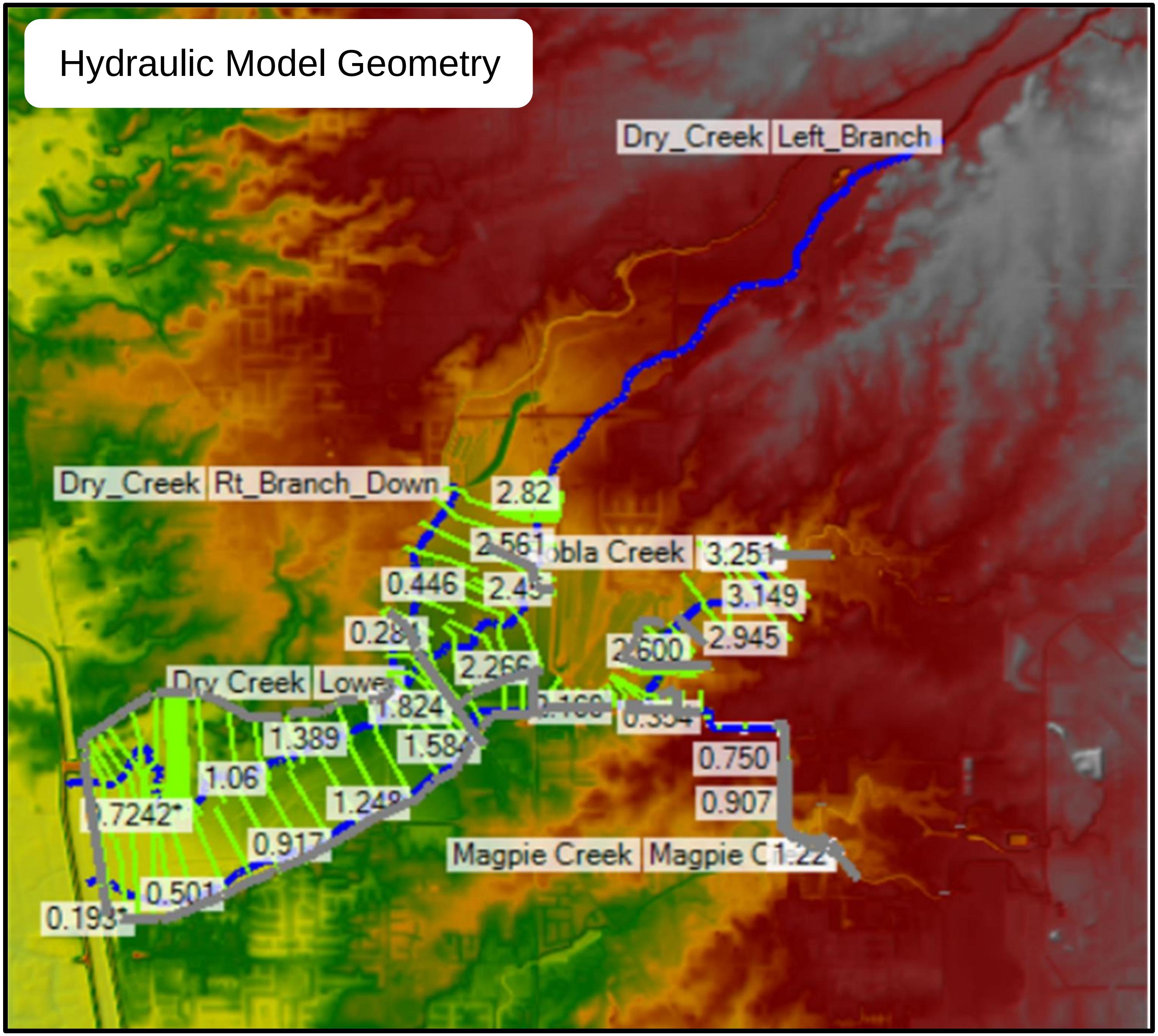

Figure 1. Hydraulic Model Geometry Map

Table 1. Hydraulic Model Output

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chn	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Robla Creek	Upper	3.251	Max WS	Pre-Project 2yr	335.37	38.60	46.89		46.92	0.000550	1.49	432.18	330.37	0.11
Robla Creek	Upper	3.251	Max WS	Pre-Project 10yr	620.07	38.60	47.78		47.80	0.000603	1.72	760.72	435.64	0.12
Robla Creek	Upper	3.251	Max WS	Pre-Project 25yr	822.83	38.60	48.08		48.11	0.000722	1.94	885.85	438.79	0.13
Robla Creek	Upper	3.251	Max WS	Pre-Project_50yr	1013.82	38.60	48.29		48.32	0.000850	2.15	974.58	440.58	0.14
Robla Creek	Upper	3.251	Max WS	Pre-Project_100yr	1193.00	38.60	48.46		48.50	0.000966	2.33	1048.39	442.06	0.15
Robla Creek	Upper	3.251	Max WS	Pre-Project 200yr	1360.12	38.60	48.62		48.66	0.001055	2.47	1116.19	443.42	0.16
Robla Creek	Upper	3.251	Max WS	Pre-Project 500yr	1587.97	38.60	48.81		48.86	0.001186	2.67	1195.86	445.01	0.17
Robla Creek	Upper	3.251	Max WS	Post Project 500yr	1587.97	38.60	48.81		48.86	0.001185	2.66	1196.14	445.01	0.17
Robla Creek	Upper	3.251	Max WS	Post Project 200 yr	1360.32	38.60	48.62		48.67	0.001055	2.47	1116.61	443.43	0.16
Robla Creek	Upper	3.251	Max WS	Post Project 100yr	1192.97	38.60	48.47		48.51	0.000959	2.32	1051.04	442.12	0.15
Robla Creek	Upper	3.251	Max WS	Post Project 50yr	1014.47	38.60	48.29		48.32	0.000851	2.15	974.61	440.58	0.14
Robla Creek	Upper	3.251	Max WS	Post Project 25yr	822.77	38.60	48.07		48.10	0.000724	1.94	884.47	438.76	0.13
Robla Creek	Upper	3.251	Max WS	Post Project 10yr	621.03	38.60	47.78		47.81	0.000602	1.72	762.49	435.80	0.12
Robla Creek	Upper	3.251	Max WS	Post Project 2yr	335.36	38.60	46.89		46.92	0.000551	1.49	431.72	330.33	0.11
Robla Creek	Upper	3.217	Max WS	Pre-Project 2yr	335.25	39.24	46.73	42.81	46.78	0.000898	1.67	200.94	163.16	0.15
Robla Creek	Upper	3.217	Max WS	Pre-Project 10yr	619.01	39.24	47.50	43.70	47.60	0.001826	2.54	290.65	641.68	0.21
Robla Creek	Upper	3.217	Max WS	Pre-Project 25yr	821.67	39.24	47.72	44.21	47.85	0.002385	3.00	429.15	715.92	0.25
Robla Creek	Upper	3.217	Max WS	Pre-Project_50yr	1011.85	39.24	47.86	44.64	48.01	0.002921	3.38	527.97	758.85	0.27
Robla Creek	Upper	3.217	Max WS	Pre-Project_100yr	1190.81	39.24	47.97	45.01	48.15	0.003322	3.66	619.78	818.50	0.29
Robla Creek	Upper	3.217	Max WS	Pre-Project 200yr	1357.26	39.24	48.15	45.34	48.31	0.003260	3.72	769.18	883.44	0.29
Robla Creek	Upper	3.217	Max WS	Pre-Project 500yr	1585.84	39.24	48.33	45.75	48.48	0.003168	3.75	936.46	897.23	0.29
Robla Creek	Upper	3.217	Max WS	Post Project 500yr	1585.98	39.24	48.34	45.75	48.49	0.003153	3.75	938.94	897.33	0.29
Robla Creek	Upper	3.217	Max WS	Post Project 200 yr	1357.60	39.24	48.15	45.34	48.31	0.003240	3.71	772.32	883.70	0.29
Robla Creek	Upper	3.217	Max WS	Post Project 100yr	1190.81	39.24	47.99	45.01	48.16	0.003212	3.61	636.21	857.75	0.29
Robla Creek	Upper	3.217	Max WS	Post Project 50yr	1012.56	39.24	47.85	44.63	48.01	0.002931	3.39	527.16	758.60	0.27
Robla Creek	Upper	3.217	Max WS	Post Project 25yr	821.49	39.24	47.71	44.21	47.84	0.002406	3.01	424.82	715.39	0.25
Robla Creek	Upper	3.217	Max WS	Post Project 10yr	618.34	39.24	47.50	43.69	47.60	0.001811	2.53	293.60	643.70	0.21
Robla Creek	Upper	3.217	Max WS	Post Project 2yr	335.26	39.24	46.73	42.81	46.77	0.000899	1.67	200.86	162.45	0.15
Robla Creek	Upper	3.210 E Street			Bridge									
Robla Creek	Upper	3.204	Max WS	Pre-Project 2yr	335.20	38.86	46.66		46.69	0.000586	1.39	240.98	333.33	0.12
Robla Creek	Upper	3.204	Max WS	Pre-Project 10yr	617.71	38.86	47.29		47.37	0.001258	2.22	279.96	704.97	0.18
Robla Creek	Upper	3.204	Max WS	Pre-Project 25yr	820.61	38.86	47.59		47.69	0.001574	2.59	494.72	778.24	0.20
Robla Creek	Upper	3.204	Max WS	Pre-Project_50yr	1011.34	38.86	47.82		47.92	0.001695	2.77	681.23	878.07	0.21
Robla Creek	Upper	3.204	Max WS	Pre-Project_100yr	1190.91	38.86	48.00		48.10	0.001753	2.88	843.45	914.55	0.22
Robla Creek	Upper	3.204	Max WS	Pre-Project 200yr	1357.38	38.86	48.15		48.25	0.001779	2.95	987.04	942.41	0.22
Robla Creek	Upper	3.204	Max WS	Pre-Project 500yr	1586.04	38.86	48.34		48.43	0.001830	3.06	1160.91	956.63	0.22
Robla Creek	Upper	3.204	Max WS	Post Project 500yr	1585.98	38.86	48.34		48.43	0.001831	3.06	1160.81	956.62	0.22
Robla Creek	Upper	3.204	Max WS	Post Project 200 yr	1357.60	38.86	48.15		48.25	0.001780	2.95	987.11	942.42	0.22
Robla Creek	Upper	3.204	Max WS	Post Project 100yr	1190.81	38.86	48.00		48.10	0.001753	2.88	843.24	914.50	0.22
Robla Creek	Upper	3.204	Max WS	Post Project 50yr	1011.66	38.86	47.82		47.92	0.001695	2.77	681.52	878.13	0.21
Robla Creek	Upper	3.204	Max WS	Post Project 25yr	820.41	38.86	47.59		47.69	0.001573	2.59	494.67	778.22	0.20
Robla Creek	Upper	3.204	Max WS	Post Project 10yr	618.01	38.86	47.29		47.37	0.001259	2.22	279.98	705.73	0.18
Robla Creek	Upper	3.204	Max WS	Post Project 2yr	335.22	38.86	46.65		46.68	0.000586	1.39	240.90	333.14	0.12
Robla Creek	Upper	3.149	Max WS	Pre-Project 2yr	335.12	38.12	46.29		46.37	0.001805	2.39	233.76	575.32	0.19
Robla Creek	Upper	3.149	Max WS	Pre-Project 10yr	616.26	38.12	46.77		46.86	0.002515	2.90	435.97	812.98	0.23
Robla Creek	Upper	3.149	Max WS	Pre-Project 25yr	819.05	38.12	46.98		47.07	0.002946	3.20	532.82	925.55	0.25
Robla Creek	Upper	3.149	Max WS	Pre-Project_50yr	1009.71	38.12	47.15		47.25	0.003199	3.40	617.18	1038.98	0.26
Robla Creek	Upper	3.149	Max WS	Pre-Project_100yr	1189.72	38.12	47.30		47.40	0.003366	3.55	695.50	1093.65	0.27
Robla Creek	Upper	3.149	Max WS	Pre-Project 200yr	1355.43	38.12	47.43		47.53	0.003506	3.68	765.02	1140.87	0.27
Robla Creek	Upper	3.149	Max WS	Pre-Project 500yr	1583.10	38.12	47.59		47.70	0.003643	3.82	859.31	1166.95	0.28
Robla Creek	Upper	3.149	Max WS	Post Project 500yr	1529.59	38.12	47.59		47.69	0.003385	3.69	860.86	1167.34	0.27
Robla Creek	Upper	3.149	Max WS	Post Project 200 yr	1355.61	38.12	47.43		47.53	0.003507	3.68	765.01	1140.86	0.27
Robla Creek	Upper	3.149	Max WS	Post Project 100yr	1189.38	38.12	47.30		47.40	0.003367	3.55	695.24	1093.49	0.27
Robla Creek	Upper	3.149	Max WS	Post Project 50yr	1009.96	38.12	47.15		47.25	0.003200	3.40	617.14	1038.91	0.26
Robla Creek	Upper	3.149	Max WS	Post Project 25yr	819.03	38.12	46.98		47.07	0.002948	3.20	532.69	925.38	0.25
Robla Creek	Upper	3.149	Max WS	Post Project 10yr	616.45	38.12	46.77		46.86	0.002520	2.91	435.61	812.58	0.23
Robla Creek	Upper	3.149	Max WS	Post Project 2yr	335.15	38.12	46.28		46.36	0.001816	2.40	232.50	574.02	0.19
Robla Creek	Upper	3.047*	Max WS	Pre-Project 2yr	334.77	37.76	44.96		45.09	0.004456	3.19	163.40	277.33	0.30
Robla Creek	Upper	3.047*	Max WS	Pre-Project 10yr	614.48	37.76	45.72		45.78	0.003841	2.70	466.65	799.08	0.28
Robla Creek	Upper	3.047*	Max WS	Pre-Project 25yr	817.34	37.76	45.99		46.03	0.003132	2.51	650.57	949.77	0.25
Robla Creek	Upper	3.047*	Max WS	Pre-Project_50yr	1007.43	37.76	46.19		46.23	0.002829	2.44	795.30	1019.42	0.24
Robla Creek	Upper	3.047*	Max WS	Pre-Project_100yr	1186.13	37.76	46.35		46.39	0.002675	2.45	918.27	1045.37	0.24
Robla Creek	Upper	3.047*	Max WS	Pre-Project 200yr	1311.50	37.76	46.52		46.55	0.002254	2.33	1043.79	1071.72	0.22
Robla Creek	Upper	3.047*	Max WS	Pre-Project 500yr	1357.48	37.76	46.85		46.87	0.001272	1.86	1300.87	1149.92	0.17
Robla Creek	Upper	3.047*	Max WS	Post Project 500yr	1357.15	37.76	46.91		46.93	0.001125	1.77	1355.83	1156.32	0.16

Robla Creek	Upper	3.047*	Max WS	Post Project 200 yr	1270.63	37.76	46.55		46.58	0.001965	2.19	1070.72	1078.30	0.21
Robla Creek	Upper	3.047*	Max WS	Post Project 100yr	1155.34	37.76	46.36		46.40	0.002472	2.36	926.76	1047.16	0.23
Robla Creek	Upper	3.047*	Max WS	Post Project 50yr	1007.17	37.76	46.19		46.23	0.002811	2.43	796.94	1019.73	0.24
Robla Creek	Upper	3.047*	Max WS	Post Project 25yr	817.28	37.76	45.99		46.04	0.003123	2.50	651.21	950.18	0.25
Robla Creek	Upper	3.047*	Max WS	Post Project 10yr	614.47	37.76	45.72		45.79	0.003812	2.69	468.36	800.99	0.28
Robla Creek	Upper	3.047*	Max WS	Post Project 2yr	334.79	37.76	44.97		45.10	0.004403	3.17	165.17	281.03	0.30
Robla Creek	Upper	2.945	Max WS	Pre-Project 2yr	334.01	37.40	43.60		43.64	0.001431	1.60	208.76	80.54	0.18
Robla Creek	Upper	2.945	Max WS	Pre-Project 10yr	613.08	37.40	44.63		44.70	0.001662	2.02	337.31	306.06	0.20
Robla Creek	Upper	2.945	Max WS	Pre-Project 25yr	802.56	37.40	45.03		45.09	0.001803	2.17	481.41	467.43	0.21
Robla Creek	Upper	2.945	Max WS	Pre-Project_50yr	979.23	37.40	45.32		45.39	0.001706	2.22	630.39	639.43	0.20
Robla Creek	Upper	2.945	Max WS	Pre-Project_100yr	1122.30	37.40	45.61		45.66	0.001418	2.12	809.25	831.59	0.19
Robla Creek	Upper	2.945	Max WS	Pre-Project 200yr	1155.44	37.40	45.95		45.98	0.000889	1.77	1052.42	997.75	0.15
Robla Creek	Upper	2.945	Max WS	Pre-Project 500yr	1328.98	37.40	46.55		46.57	0.000499	1.45	1504.20	1248.62	0.12
Robla Creek	Upper	2.945	Max WS	Post Project 500yr	1329.78	37.40	46.66		46.67	0.000439	1.38	1588.13	1310.65	0.11
Robla Creek	Upper	2.945	Max WS	Post Project 200 yr	1149.08	37.40	46.10		46.12	0.000700	1.61	1161.24	1052.69	0.13
Robla Creek	Upper	2.945	Max WS	Post Project 100yr	1110.67	37.40	45.68		45.73	0.001256	2.02	858.92	883.37	0.18
Robla Creek	Upper	2.945	Max WS	Post Project 50yr	975.94	37.40	45.36		45.42	0.001605	2.16	649.99	659.60	0.20
Robla Creek	Upper	2.945	Max WS	Post Project 25yr	802.41	37.40	45.04		45.10	0.001772	2.15	486.40	472.19	0.20
Robla Creek	Upper	2.945	Max WS	Post Project 10yr	612.79	37.40	44.65		44.71	0.001640	2.01	340.98	312.21	0.20
Robla Creek	Upper	2.945	Max WS	Post Project 2yr	334.30	37.40	43.63		43.67	0.001372	1.58	211.82	80.85	0.17
Robla Creek	Upper	2.836	Max WS	Pre-Project 2yr	332.42	36.44	42.83		42.87	0.001247	1.58	217.07	128.99	0.17
Robla Creek	Upper	2.836	Max WS	Pre-Project 10yr	599.55	36.44	43.95		43.99	0.000999	1.72	525.35	559.60	0.16
Robla Creek	Upper	2.836	Max WS	Pre-Project 25yr	797.51	36.44	44.41		44.44	0.000816	1.68	821.17	692.74	0.14
Robla Creek	Upper	2.836	Max WS	Pre-Project_50yr	937.72	36.44	44.78		44.80	0.000623	1.55	1090.64	794.23	0.13
Robla Creek	Upper	2.836	Max WS	Pre-Project_100yr	1079.65	36.44	45.19		45.21	0.000443	1.39	1399.47	1077.37	0.11
Robla Creek	Upper	2.836	Max WS	Pre-Project 200yr	1126.63	36.44	45.70		45.71	0.000253	1.12	1798.19	1260.04	0.08
Robla Creek	Upper	2.836	Max WS	Pre-Project 500yr	1242.48	36.44	46.41		46.42	0.000140	0.90	2370.12	1381.50	0.06
Robla Creek	Upper	2.836	Max WS	Post Project 500yr	1242.55	36.44	46.54		46.54	0.000124	0.86	2470.29	1398.38	0.06
Robla Creek	Upper	2.836	Max WS	Post Project 200 yr	1122.24	36.44	45.90		45.91	0.000198	1.01	1957.76	1307.68	0.07
Robla Creek	Upper	2.836	Max WS	Post Project 100yr	1006.98	36.44	45.34		45.35	0.000316	1.19	1510.48	1136.80	0.09
Robla Creek	Upper	2.836	Max WS	Post Project 50yr	939.85	36.44	44.87		44.89	0.000546	1.47	1153.44	825.56	0.12
Robla Creek	Upper	2.836	Max WS	Post Project 25yr	796.70	36.44	44.44		44.47	0.000771	1.64	843.37	699.21	0.14
Robla Creek	Upper	2.836	Max WS	Post Project 10yr	600.74	36.44	43.98		44.02	0.000951	1.69	543.49	572.47	0.15
Robla Creek	Upper	2.836	Max WS	Post Project 2yr	333.98	36.44	42.92		42.96	0.001120	1.53	229.52	133.41	0.16

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Robla Creek	Upper	2.747	Max WS	Pre-Project 2yr	327.82	35.12	42.08		42.13	0.001906	1.72	196.46	124.86	0.17
Robla Creek	Upper	2.747	Max WS	Pre-Project 10yr	592.82	35.12	43.34		43.38	0.001494	1.82	466.51	781.28	0.15
Robla Creek	Upper	2.747	Max WS	Pre-Project 25yr	772.28	35.12	43.97		44.00	0.000944	1.58	795.13	987.67	0.13
Robla Creek	Upper	2.747	Max WS	Pre-Project_50yr	915.04	35.12	44.48		44.50	0.000609	1.36	1073.28	1024.23	0.10
Robla Creek	Upper	2.747	Max WS	Pre-Project_100yr	991.96	35.12	45.01		45.02	0.000360	1.11	1364.45	1112.12	0.08
Robla Creek	Upper	2.747	Max WS	Pre-Project 200yr	1114.70	35.12	45.58		45.59	0.000244	0.97	1677.55	1145.87	0.07
Robla Creek	Upper	2.747	Max WS	Pre-Project 500yr	1239.42	35.12	46.34		46.35	0.000150	0.82	2096.41	1207.90	0.05
Robla Creek	Upper	2.747	Max WS	Post Project 500yr	1239.08	35.12	46.47		46.48	0.000135	0.79	2168.13	1230.74	0.05
Robla Creek	Upper	2.747	Max WS	Post Project 200 yr	1113.12	35.12	45.80		45.81	0.000195	0.89	1801.90	1163.67	0.06
Robla Creek	Upper	2.747	Max WS	Post Project 100yr	995.20	35.12	45.19		45.20	0.000295	1.02	1461.45	1119.69	0.07
Robla Creek	Upper	2.747	Max WS	Post Project 50yr	925.84	35.12	44.60		44.62	0.000524	1.28	1141.96	1043.54	0.10
Robla Creek	Upper	2.747	Max WS	Post Project 25yr	777.61	35.12	44.04		44.06	0.000858	1.52	831.47	996.04	0.12
Robla Creek	Upper	2.747	Max WS	Post Project 10yr	599.37	35.12	43.41		43.45	0.001381	1.77	501.50	811.63	0.15
Robla Creek	Upper	2.747	Max WS	Post Project 2yr	333.95	35.12	42.27		42.31	0.001655	1.64	214.04	142.38	0.16
Robla Creek	Upper	2.654	Max WS	Pre-Project 2yr	327.71	34.50	41.57		41.58	0.000289	0.88	370.43	75.79	0.07
Robla Creek	Upper	2.654	Max WS	Pre-Project 10yr	578.13	34.50	42.89		42.91	0.000434	1.22	473.42	294.64	0.09
Robla Creek	Upper	2.654	Max WS	Pre-Project 25yr	753.34	34.50	43.61		43.64	0.000523	1.41	532.69	345.93	0.10
Robla Creek	Upper	2.654	Max WS	Pre-Project_50yr	853.71	34.50	44.19		44.22	0.000521	1.47	581.60	432.33	0.10
Robla Creek	Upper	2.654	Max WS	Pre-Project_100yr	943.60	34.50	44.78		44.81	0.000493	1.49	642.02	520.52	0.10
Robla Creek	Upper	2.654	Max WS	Pre-Project 200yr	1077.95	34.50	45.37		45.41	0.000486	1.56	715.99	580.94	0.10
Robla Creek	Upper	2.654	Max WS	Pre-Project 500yr	1234.41	34.50	46.20		46.23	0.000367	1.45	1167.80	637.98	0.09
Robla Creek	Upper	2.654	Max WS	Post Project 500yr	1233.15	34.50	46.34		46.37	0.000324	1.38	1261.56	642.19	0.08
Robla Creek	Upper	2.654	Max WS	Post Project 200 yr	1103.09	34.50	45.63		45.66	0.000449	1.53	808.84	618.02	0.09
Robla Creek	Upper	2.654	Max WS	Post Project 100yr	985.39	34.50	44.97		45.01	0.000490	1.51	664.77	548.55	0.10
Robla Creek	Upper	2.654	Max WS	Post Project 50yr	914.67	34.50	44.32		44.36	0.000566	1.54	592.91	443.21	0.10
Robla Creek	Upper	2.654	Max WS	Post Project 25yr	757.07	34.50	43.70		43.73	0.000507	1.40	539.99	350.21	0.10
Robla Creek	Upper	2.654	Max WS	Post Project 10yr	598.46	34.50	42.98		43.00	0.000444	1.24	480.93	301.49	0.09
Robla Creek	Upper	2.654	Max WS	Post Project 2yr	333.90	34.50	41.82		41.84	0.000258	0.86	389.69	76.84	0.07
Robla Creek	Upper	2.626 Dry Creek Rd			Culvert									
Robla Creek	Upper	2.600	Max WS	Pre-Project 2yr	327.70	34.00	41.54		41.55	0.000310	0.86	382.69	86.08	0.07

Robla Creek	Upper	2.600	Max WS	Pre-Project 10yr	576.98	34.00	42.84		42.86	0.000435	1.16	497.48	169.26	0.09
Robla Creek	Upper	2.600	Max WS	Pre-Project 25yr	745.86	34.00	43.54		43.57	0.000493	1.33	562.61	226.54	0.09
Robla Creek	Upper	2.600	Max WS	Pre-Project_50yr	844.41	34.00	44.07		44.10	0.000481	1.38	615.59	244.10	0.09
Robla Creek	Upper	2.600	Max WS	Pre-Project_100yr	940.76	34.00	44.63		44.66	0.000451	1.41	689.58	427.50	0.09
Robla Creek	Upper	2.600	Max WS	Pre-Project 200yr	1077.24	34.00	45.17		45.20	0.000441	1.46	841.99	516.86	0.09
Robla Creek	Upper	2.600	Max WS	Pre-Project 500yr	1226.39	34.00	46.00		46.03	0.000305	1.31	1295.84	564.38	0.08
Robla Creek	Upper	2.600	Max WS	Post Project 500yr	1225.67	34.00	46.22		46.24	0.000256	1.21	1418.92	566.77	0.07
Robla Creek	Upper	2.600	Max WS	Post Project 200 yr	1088.66	34.00	45.41		45.44	0.000381	1.39	969.75	532.49	0.09
Robla Creek	Upper	2.600	Max WS	Post Project 100yr	956.46	34.00	44.81		44.84	0.000424	1.39	721.05	452.81	0.09
Robla Creek	Upper	2.600	Max WS	Post Project 50yr	860.04	34.00	44.18		44.21	0.000471	1.38	627.51	248.14	0.09
Robla Creek	Upper	2.600	Max WS	Post Project 25yr	748.65	34.00	43.62		43.65	0.000476	1.32	570.54	229.28	0.09
Robla Creek	Upper	2.600	Max WS	Post Project 10yr	598.20	34.00	42.93		42.95	0.000444	1.18	505.82	175.08	0.09
Robla Creek	Upper	2.600	Max WS	Post Project 2yr	333.90	34.00	41.79		41.80	0.000272	0.83	404.58	89.60	0.07
Robla Creek	Upper	2.593			Lat Struct									
Robla Creek	Upper	2.540	Max WS	Pre-Project 2yr	327.67	31.35	41.50		41.50	0.000022	0.28	1213.81	499.50	0.02
Robla Creek	Upper	2.540	Max WS	Pre-Project 10yr	574.96	31.35	42.79		42.79	0.000032	0.37	1702.10	545.00	0.02
Robla Creek	Upper	2.540	Max WS	Pre-Project 25yr	704.77	31.35	43.49		43.49	0.000032	0.39	1978.23	571.74	0.03
Robla Creek	Upper	2.540	Max WS	Pre-Project_50yr	809.05	31.35	44.02		44.02	0.000031	0.41	2208.19	627.51	0.03
Robla Creek	Upper	2.540	Max WS	Pre-Project_100yr	939.29	31.35	44.58		44.58	0.000031	0.43	2483.90	708.60	0.03
Robla Creek	Upper	2.540	Max WS	Pre-Project 200yr	1077.09	31.35	45.12		45.13	0.000031	0.44	2791.32	812.68	0.03
Robla Creek	Upper	2.540	Max WS	Pre-Project 500yr	1225.74	31.35	45.97		45.97	0.000026	0.43	3343.92	917.59	0.02
Robla Creek	Upper	2.540	Max WS	Post Project 500yr	1224.63	31.35	46.19		46.20	0.000024	0.42	3492.48	923.07	0.02
Robla Creek	Upper	2.540	Max WS	Post Project 200 yr	1088.35	31.35	45.37		45.38	0.000028	0.43	2946.26	877.97	0.02
Robla Creek	Upper	2.540	Max WS	Post Project 100yr	955.93	31.35	44.76		44.77	0.000029	0.42	2583.80	737.04	0.03
Robla Creek	Upper	2.540	Max WS	Post Project 50yr	854.59	31.35	44.13		44.14	0.000033	0.42	2262.01	637.97	0.03
Robla Creek	Upper	2.540	Max WS	Post Project 25yr	741.44	31.35	43.57		43.57	0.000034	0.41	2011.12	574.64	0.03
Robla Creek	Upper	2.540	Max WS	Post Project 10yr	597.74	31.35	42.88		42.88	0.000032	0.38	1737.21	546.84	0.03
Robla Creek	Upper	2.540	Max WS	Post Project 2yr	333.85	31.35	41.76		41.76	0.000020	0.27	1309.18	529.07	0.02
Robla Creek	Upper	2.4955*	Max WS	Pre-Project 2yr	327.67	31.42	41.50		41.50	0.000023	0.28	1164.28	265.98	0.02
Robla Creek	Upper	2.4955*	Max WS	Pre-Project 10yr	574.85	31.42	42.78		42.78	0.000035	0.39	1547.67	370.59	0.03
Robla Creek	Upper	2.4955*	Max WS	Pre-Project 25yr	704.17	31.42	43.48		43.48	0.000036	0.42	1821.62	401.04	0.03
Robla Creek	Upper	2.4955*	Max WS	Pre-Project_50yr	808.64	31.42	44.01		44.01	0.000035	0.44	2057.64	496.06	0.03
Robla Creek	Upper	2.4955*	Max WS	Pre-Project_100yr	939.07	31.42	44.57		44.57	0.000036	0.46	2346.06	546.01	0.03
Robla Creek	Upper	2.4955*	Max WS	Pre-Project 200yr	1077.04	31.42	45.12		45.12	0.000035	0.48	2647.61	624.56	0.03
Robla Creek	Upper	2.4955*	Max WS	Pre-Project 500yr	1225.60	31.42	45.96		45.97	0.000030	0.47	3185.20	809.11	0.03
Robla Creek	Upper	2.4955*	Max WS	Post Project 500yr	1224.46	31.42	46.19		46.19	0.000027	0.45	3331.45	816.96	0.02
Robla Creek	Upper	2.4955*	Max WS	Post Project 200 yr	1088.32	31.42	45.37		45.37	0.000032	0.47	2798.73	720.66	0.03
Robla Creek	Upper	2.4955*	Max WS	Post Project 100yr	955.85	31.42	44.76		44.76	0.000034	0.46	2446.49	558.48	0.03
Robla Creek	Upper	2.4955*	Max WS	Post Project 50yr	853.66	31.42	44.12		44.13	0.000037	0.46	2114.11	502.92	0.03
Robla Creek	Upper	2.4955*	Max WS	Post Project 25yr	740.24	31.42	43.56		43.56	0.000038	0.44	1853.65	409.07	0.03
Robla Creek	Upper	2.4955*	Max WS	Post Project 10yr	597.67	31.42	42.87		42.87	0.000036	0.40	1581.44	377.54	0.03
Robla Creek	Upper	2.4955*	Max WS	Post Project 2yr	333.79	31.42	41.75		41.76	0.000021	0.27	1217.43	299.91	0.02
Robla Creek	Upper	2.451	Max WS	Pre-Project 2yr	327.66	32.00	41.49		41.49	0.000016	0.25	1325.46	212.01	0.02
Robla Creek	Upper	2.451	Max WS	Pre-Project 10yr	574.55	32.00	42.77		42.77	0.000027	0.36	1602.32	220.89	0.02
Robla Creek	Upper	2.451	Max WS	Pre-Project 25yr	703.60	32.00	43.47		43.47	0.000031	0.40	1758.74	235.73	0.03
Robla Creek	Upper	2.451	Max WS	Pre-Project_50yr	808.27	32.00	44.00		44.00	0.000033	0.43	1879.43	271.63	0.03
Robla Creek	Upper	2.451	Max WS	Pre-Project_100yr	938.97	32.00	44.56		44.56	0.000036	0.47	2011.54	308.13	0.03
Robla Creek	Upper	2.451	Max WS	Pre-Project 200yr	1077.00	32.00	45.11		45.11	0.000039	0.50	2169.90	530.76	0.03
Robla Creek	Upper	2.451	Max WS	Pre-Project 500yr	1225.38	32.00	45.96		45.96	0.000036	0.51	2691.85	714.95	0.03
Robla Creek	Upper	2.451	Max WS	Post Project 500yr	1224.31	32.00	46.18		46.18	0.000033	0.49	2858.12	765.75	0.03
Robla Creek	Upper	2.451	Max WS	Post Project 200 yr	1088.29	32.00	45.36		45.36	0.000036	0.49	2308.34	583.43	0.03
Robla Creek	Upper	2.451	Max WS	Post Project 100yr	955.90	32.00	44.75		44.75	0.000035	0.47	2057.09	324.20	0.03
Robla Creek	Upper	2.451	Max WS	Post Project 50yr	852.76	32.00	44.12		44.12	0.000035	0.45	1905.82	279.07	0.03
Robla Creek	Upper	2.451	Max WS	Post Project 25yr	738.67	32.00	43.55		43.55	0.000033	0.42	1776.58	241.94	0.03
Robla Creek	Upper	2.451	Max WS	Post Project 10yr	597.65	32.00	42.86		42.86	0.000028	0.37	1622.22	221.51	0.02
Robla Creek	Upper	2.451	Max WS	Post Project 2yr	333.77	32.00	41.75		41.75	0.000014	0.24	1380.54	213.80	0.02
Robla Creek	Upper	2.423	Max WS	Pre-Project 2yr	327.63	32.88	41.48	35.34	41.48	0.000096	0.58	561.83	92.81	0.04
Robla Creek	Upper	2.423	Max WS	Pre-Project 10yr	573.95	32.88	42.75	35.75	42.76	0.000162	0.84	680.34	93.84	0.06
Robla Creek	Upper	2.423	Max WS	Pre-Project 25yr	701.53	32.88	43.45	35.97	43.46	0.000182	0.94	747.57	127.95	0.06
Robla Creek	Upper	2.423	Max WS	Pre-Project_50yr	807.53	32.88	43.97	36.12	43.99	0.000196	1.01	803.01	154.60	0.06
Robla Creek	Upper	2.423	Max WS	Pre-Project_100yr	938.59	32.88	44.53	36.30	44.55	0.000212	1.10	885.86	286.81	0.06
Robla Creek	Upper	2.423	Max WS	Pre-Project 200yr	1077.00	32.88	45.07	36.48	45.09	0.000219	1.16	1064.27	596.10	0.07
Robla Creek	Upper	2.423	Max WS	Pre-Project 500yr	1225.23	32.88	45.93	36.66	45.95	0.000160	1.05	1749.38	1142.49	0.06
Robla Creek	Upper	2.423	Max WS	Post Project 500yr	1224.41	32.88	46.16	36.66	46.17	0.000132	0.97	1994.49	1281.10	0.05
Robla Creek	Upper	2.423	Max WS	Post Project 200 yr	1088.28	32.88	45.33	36.50	45.35	0.000195	1.12	1224.98	834.08	0.06
Robla Creek	Upper	2.423	Max WS	Post Project 100yr	955.75	32.88	44.72	36.33	44.73	0.000203	1.09	932.26	337.87	0.06
Robla Creek	Upper	2.423	Max WS	Post Project 50yr	849.25	32.88	44.09	36.18	44.10	0.000207	1.05	815.67	161.40	0.06
Robla Creek	Upper	2.423	Max WS	Post Project 25yr	710.78	32.88	43.52	35.98	43.54	0.000181	0.94	755.57	131.59	0.06

River	Reach	River Sta	Profile	Plan	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Robla Creek	Upper	2.423	Max WS	Post Project 10yr	597.49	32.88	42.84	35.81	42.85	0.000169	0.87	688.69	93.91	0.06
Robla Creek	Upper	2.423	Max WS	Post Project 2yr	333.53	32.88	41.74	35.35	41.74	0.000087	0.57	585.97	93.09	0.04
Robla Creek	Upper	2.420			Bridge									
Robla Creek	Upper	2.417	Max WS	Pre-Project 2yr	327.63	32.73	41.47		41.47	0.000115	0.66	499.05	76.75	0.05
Robla Creek	Upper	2.417	Max WS	Pre-Project 10yr	573.30	32.73	42.72		42.73	0.000205	0.96	596.08	95.99	0.06
Robla Creek	Upper	2.417	Max WS	Pre-Project 25yr	699.93	32.73	43.40		43.42	0.000235	1.08	650.44	122.73	0.07
Robla Creek	Upper	2.417	Max WS	Pre-Project_50yr	806.23	32.73	43.92		43.94	0.000258	1.17	691.82	136.83	0.07
Robla Creek	Upper	2.417	Max WS	Pre-Project_100yr	937.94	32.73	44.47		44.49	0.000284	1.27	771.22	378.70	0.07
Robla Creek	Upper	2.417	Max WS	Pre-Project 200yr	1076.99	32.73	45.03		45.05	0.000276	1.30	1059.66	769.29	0.07
Robla Creek	Upper	2.417	Max WS	Pre-Project 500yr	1225.06	32.73	45.91		45.92	0.000181	1.12	1817.58	1223.45	0.06
Robla Creek	Upper	2.417	Max WS	Post Project 500yr	1224.08	32.73	46.14		46.15	0.000144	1.01	2091.16	1258.45	0.05
Robla Creek	Upper	2.417	Max WS	Post Project 200 yr	1088.27	32.73	45.30		45.32	0.000233	1.22	1251.15	864.16	0.07
Robla Creek	Upper	2.417	Max WS	Post Project 100yr	955.75	32.73	44.66		44.68	0.000270	1.25	847.19	561.04	0.07
Robla Creek	Upper	2.417	Max WS	Post Project 50yr	841.70	32.73	44.02		44.05	0.000271	1.20	701.02	152.33	0.07
Robla Creek	Upper	2.417	Max WS	Post Project 25yr	710.49	32.73	43.48		43.50	0.000235	1.08	656.53	124.66	0.07
Robla Creek	Upper	2.417	Max WS	Post Project 10yr	597.26	32.73	42.80		42.82	0.000215	0.99	602.87	99.60	0.06
Robla Creek	Upper	2.417	Max WS	Post Project 2yr	333.53	32.73	41.73		41.73	0.000106	0.64	519.05	77.16	0.04
Robla Creek	Upper	2.4005*	Max WS	Pre-Project 2yr	327.66	31.86	41.47		41.47	0.000022	0.29	1132.05	184.72	0.02
Robla Creek	Upper	2.4005*	Max WS	Pre-Project 10yr	573.18	31.86	42.72		42.72	0.000038	0.42	1368.34	293.35	0.03
Robla Creek	Upper	2.4005*	Max WS	Pre-Project 25yr	699.93	31.86	43.40		43.41	0.000043	0.47	1503.24	341.66	0.03
Robla Creek	Upper	2.4005*	Max WS	Pre-Project_50yr	806.02	31.86	43.92		43.92	0.000048	0.50	1607.63	411.11	0.03
Robla Creek	Upper	2.4005*	Max WS	Pre-Project_100yr	938.13	31.86	44.47		44.47	0.000053	0.54	1739.19	821.05	0.03
Robla Creek	Upper	2.4005*	Max WS	Pre-Project 200yr	1077.00	31.86	45.03		45.03	0.000057	0.58	1995.43	1145.37	0.03
Robla Creek	Upper	2.4005*	Max WS	Pre-Project 500yr	1225.04	31.86	45.91		45.91	0.000043	0.54	3061.18	1392.08	0.03
Robla Creek	Upper	2.4005*	Max WS	Post Project 500yr	1224.07	31.86	46.14		46.14	0.000037	0.50	3391.05	1465.07	0.03
Robla Creek	Upper	2.4005*	Max WS	Post Project 200 yr	1088.26	31.86	45.30		45.30	0.000050	0.56	2249.90	1276.97	0.03
Robla Creek	Upper	2.4005*	Max WS	Post Project 100yr	955.74	31.86	44.66		44.66	0.000052	0.54	1794.65	930.38	0.03
Robla Creek	Upper	2.4005*	Max WS	Post Project 50yr	842.12	31.86	44.03		44.03	0.000050	0.52	1629.68	453.00	0.03
Robla Creek	Upper	2.4005*	Max WS	Post Project 25yr	710.63	31.86	43.48		43.48	0.000043	0.47	1518.49	348.65	0.03
Robla Creek	Upper	2.4005*	Max WS	Post Project 10yr	597.20	31.86	42.80		42.81	0.000040	0.43	1385.09	303.18	0.03
Robla Creek	Upper	2.4005*	Max WS	Post Project 2yr	333.50	31.86	41.73		41.73	0.000020	0.28	1180.34	186.55	0.02
Robla Creek	Upper	2.384	Max WS	Pre-Project 2yr	327.60	30.99	41.47		41.47	0.000017	0.26	1257.15	198.68	0.02
Robla Creek	Upper	2.384	Max WS	Pre-Project 10yr	573.08	30.99	42.71		42.72	0.000030	0.38	1511.33	252.75	0.02
Robla Creek	Upper	2.384	Max WS	Pre-Project 25yr	699.91	30.99	43.40		43.40	0.000035	0.42	1667.13	484.66	0.03
Robla Creek	Upper	2.384	Max WS	Pre-Project_50yr	806.16	30.99	43.92		43.92	0.000037	0.45	1832.40	623.57	0.03
Robla Creek	Upper	2.384	Max WS	Pre-Project_100yr	938.04	30.99	44.47		44.47	0.000040	0.48	2207.70	906.90	0.03
Robla Creek	Upper	2.384	Max WS	Pre-Project 200yr	1076.98	30.99	45.03		45.03	0.000038	0.49	2726.51	1069.33	0.03
Robla Creek	Upper	2.384	Max WS	Pre-Project 500yr	1225.06	30.99	45.91		45.91	0.000029	0.45	3799.85	1363.99	0.03
Robla Creek	Upper	2.384	Max WS	Post Project 500yr	1224.14	30.99	46.14		46.14	0.000025	0.43	4091.92	1400.60	0.02
Robla Creek	Upper	2.384	Max WS	Post Project 200 yr	1088.24	30.99	45.29		45.30	0.000033	0.47	3024.95	1154.66	0.03
Robla Creek	Upper	2.384	Max WS	Post Project 100yr	955.71	30.99	44.66		44.66	0.000037	0.47	2374.34	935.19	0.03
Robla Creek	Upper	2.384	Max WS	Post Project 50yr	841.69	30.99	44.03		44.03	0.000039	0.47	1883.28	652.69	0.03
Robla Creek	Upper	2.384	Max WS	Post Project 25yr	710.34	30.99	43.48		43.48	0.000035	0.42	1688.24	495.07	0.03
Robla Creek	Upper	2.384	Max WS	Post Project 10yr	597.20	30.99	42.80		42.80	0.000032	0.39	1529.37	256.74	0.03
Robla Creek	Upper	2.384	Max WS	Post Project 2yr	333.44	30.99	41.73		41.73	0.000016	0.25	1309.08	200.55	0.02
Robla Creek	Upper	2.301	Max WS	Pre-Project 2yr	327.55	31.31	41.44		41.45	0.000067	0.56	696.91	389.51	0.04
Robla Creek	Upper	2.301	Max WS	Pre-Project 10yr	572.95	31.31	42.69		42.70	0.000068	0.64	1277.27	532.62	0.04
Robla Creek	Upper	2.301	Max WS	Pre-Project 25yr	698.34	31.31	43.38		43.39	0.000056	0.62	1665.53	620.36	0.04
Robla Creek	Upper	2.301	Max WS	Pre-Project_50yr	808.87	31.31	43.90		43.90	0.000050	0.61	1992.60	691.81	0.04
Robla Creek	Upper	2.301	Max WS	Pre-Project_100yr	1004.98	31.31	44.45		44.45	0.000050	0.65	2386.18	817.17	0.04
Robla Creek	Upper	2.301	Max WS	Pre-Project 200yr	1266.29	31.31	45.00		45.01	0.000060	0.74	2881.65	916.42	0.04
Robla Creek	Upper	2.301	Max WS	Pre-Project 500yr	1468.68	31.31	45.89		45.89	0.000041	0.65	3695.41	919.76	0.04
Robla Creek	Upper	2.301	Max WS	Post Project 500yr	1674.06	31.31	46.12		46.12	0.000045	0.70	3907.58	920.63	0.04
Robla Creek	Upper	2.301	Max WS	Post Project 200 yr	1459.15	31.31	45.27		45.28	0.000064	0.78	3125.91	917.42	0.05
Robla Creek	Upper	2.301	Max WS	Post Project 100yr	1108.09	31.31	44.63		44.64	0.000056	0.70	2546.97	887.80	0.04
Robla Creek	Upper	2.301	Max WS	Post Project 50yr	850.72	31.31	44.01		44.01	0.000050	0.62	2063.40	694.52	0.04
Robla Creek	Upper	2.301	Max WS	Post Project 25yr	710.06	31.31	43.46		43.46	0.000055	0.62	1711.31	624.52	0.04
Robla Creek	Upper	2.301	Max WS	Post Project 10yr	597.22	31.31	42.78		42.78	0.000068	0.65	1322.64	554.63	0.04
Robla Creek	Upper	2.301	Max WS	Post Project 2yr	333.12	31.31	41.71		41.71	0.000056	0.52	806.39	432.59	0.04
Robla Creek	Upper	2.2673*	Max WS	Pre-Project 2yr	327.44	31.38	41.43		41.44	0.000058	0.54	712.78	330.99	0.04
Robla Creek	Upper	2.2673*	Max WS	Pre-Project 10yr	572.79	31.38	42.68		42.68	0.000073	0.63	1208.82	471.49	0.05
Robla Creek	Upper	2.2673*	Max WS	Pre-Project 25yr	697.51	31.38	43.37		43.38	0.000064	0.63	1567.65	598.57	0.04
Robla Creek	Upper	2.2673*	Max WS	Pre-Project_50yr	808.66	31.38	43.89		43.89	0.000057	0.63	1870.88	641.75	0.04
Robla Creek	Upper	2.2673*	Max	Pre-Project_100yr	1004.90	31.38	44.44		44.44	0.000061	0.68	2271.69	817.41	0.04

			WS	Pre-Project_100yr										
Robla Creek	Upper	2.2673*	Max WS	Pre-Project 200yr	1266.39	31.38	44.99		45.00	0.000065	0.73	2737.60	842.83	0.05
Robla Creek	Upper	2.2673*	Max WS	Pre-Project 500yr	1468.66	31.38	45.88		45.89	0.000045	0.65	3488.48	845.69	0.04
Robla Creek	Upper	2.2673*	Max WS	Post Project 500yr	1674.08	31.38	46.11		46.12	0.000050	0.70	3682.93	846.45	0.04
Robla Creek	Upper	2.2673*	Max WS	Post Project 200 yr	1459.18	31.38	45.26		45.27	0.000070	0.78	2961.62	843.65	0.05
Robla Creek	Upper	2.2673*	Max WS	Post Project 100yr	1108.06	31.38	44.62		44.63	0.000068	0.73	2427.05	841.68	0.05
Robla Creek	Upper	2.2673*	Max WS	Post Project 50yr	849.60	31.38	44.00		44.00	0.000058	0.64	1936.34	686.63	0.04
Robla Creek	Upper	2.2673*	Max WS	Post Project 25yr	709.84	31.38	43.45		43.45	0.000062	0.63	1611.68	603.75	0.04
Robla Creek	Upper	2.2673*	Max WS	Post Project 10yr	597.18	31.38	42.77		42.77	0.000075	0.65	1248.68	496.60	0.05
Robla Creek	Upper	2.2673*	Max WS	Post Project 2yr	332.63	31.38	41.70		41.70	0.000054	0.51	805.72	373.47	0.04
Robla Creek	Upper	2.200	Max WS	Pre-Project 2yr	512.24	31.51	41.40		41.41	0.000114	0.78	820.59	297.09	0.06
Robla Creek	Upper	2.200	Max WS	Pre-Project 10yr	770.30	31.51	42.65		42.65	0.000108	0.83	1257.52	473.63	0.05
Robla Creek	Upper	2.200	Max WS	Pre-Project 25yr	892.38	31.51	43.34		43.35	0.000091	0.81	1607.77	568.34	0.05
Robla Creek	Upper	2.200	Max WS	Pre-Project_50yr	995.69	31.51	43.87		43.87	0.000079	0.78	1915.34	613.63	0.05
Robla Creek	Upper	2.200	Max WS	Pre-Project_100yr	1157.01	31.51	44.42		44.42	0.000073	0.78	2261.18	632.02	0.05
Robla Creek	Upper	2.200	Max WS	Pre-Project 200yr	1358.93	31.51	44.97		44.98	0.000068	0.78	2613.49	633.98	0.05
Robla Creek	Upper	2.200	Max WS	Pre-Project 500yr	1524.76	31.51	45.87		45.87	0.000049	0.70	3182.74	637.14	0.04
Robla Creek	Upper	2.200	Max WS	Post Project 500yr	1886.74	31.51	46.09		46.10	0.000066	0.82	3326.09	637.93	0.04
Robla Creek	Upper	2.200	Max WS	Post Project 200 yr	1742.51	31.51	45.23		45.24	0.000095	0.94	2777.37	634.89	0.05
Robla Creek	Upper	2.200	Max WS	Post Project 100yr	1430.74	31.51	44.60		44.60	0.000098	0.92	2374.56	632.65	0.05
Robla Creek	Upper	2.200	Max WS	Post Project 50yr	1207.00	31.51	43.96		43.97	0.000110	0.93	1976.38	626.11	0.06
Robla Creek	Upper	2.200	Max WS	Post Project 25yr	1042.75	31.51	43.41		43.42	0.000118	0.92	1647.51	573.11	0.06
Robla Creek	Upper	2.200	Max WS	Post Project 10yr	935.95	31.51	42.72		42.73	0.000159	1.01	1291.04	495.76	0.07
Robla Creek	Upper	2.200	Max WS	Post Project 2yr	640.26	31.51	41.65		41.66	0.000150	0.91	897.99	314.56	0.06
Robla Creek	Magpie to NEMDC	2.160	Max WS	Pre-Project 2yr	1063.29	33.22	41.40		41.43	0.000508	1.69	929.02	430.58	0.12
Robla Creek	Magpie to NEMDC	2.160	Max WS	Pre-Project 10yr	1506.27	33.22	42.65		42.67	0.000325	1.53	1491.20	460.86	0.10
Robla Creek	Magpie to NEMDC	2.160	Max WS	Pre-Project 25yr	1714.28	33.22	43.34		43.36	0.000244	1.41	1815.11	466.72	0.09
Robla Creek	Magpie to NEMDC	2.160	Max WS	Pre-Project_50yr	1870.07	33.22	43.87		43.88	0.000202	1.34	2061.38	479.10	0.08
Robla Creek	Magpie to NEMDC	2.160	Max WS	Pre-Project_100yr	2043.92	33.22	44.42		44.43	0.000170	1.28	2328.50	488.83	0.07
Robla Creek	Magpie to NEMDC	2.160	Max WS	Pre-Project 200yr	2206.61	33.22	44.97		44.99	0.000143	1.22	2601.72	492.82	0.07
Robla Creek	Magpie to NEMDC	2.160	Max WS	Pre-Project 500yr	2349.27	33.22	45.87		45.88	0.000101	1.09	3045.90	499.11	0.06
Robla Creek	Magpie to NEMDC	2.160	Max WS	Post Project 500yr	2905.95	33.69	46.09		46.11	0.000149	1.24	3147.84	500.68	0.07
Robla Creek	Magpie to NEMDC	2.160	Max WS	Post Project 200 yr	2767.74	33.69	45.23		45.25	0.000214	1.39	2718.91	494.41	0.08
Robla Creek	Magpie to NEMDC	2.160	Max WS	Post Project 100yr	2412.56	33.69	44.60		44.61	0.000237	1.39	2406.07	489.89	0.09
Robla Creek	Magpie to NEMDC	2.160	Max WS	Post Project 50yr	2152.70	33.69	43.96		43.98	0.000285	1.44	2098.93	483.11	0.09
Robla Creek	Magpie to NEMDC	2.160	Max WS	Post Project 25yr	1869.91	33.69	43.41		43.43	0.000307	1.42	1838.41	467.13	0.10
Robla Creek	Magpie to NEMDC	2.160	Max WS	Post Project 10yr	1688.12	33.69	42.72		42.74	0.000436	1.58	1515.94	461.21	0.11

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Robla Creek	Magpie to NEMDC	2.160	Max WS	Post Project 2yr	1217.15	33.69	41.65		41.68	0.000634	1.67	1031.73	443.89	0.13
Robla Creek	Magpie to NEMDC	2.15			Lat Struct									
Robla Creek	Magpie to NEMDC	2.105	Max WS	Pre-Project 2yr	1062.40	32.19	41.29		41.31	0.000507	1.53	945.81	310.01	0.12
Robla Creek	Magpie to NEMDC	2.105	Max WS	Pre-Project 10yr	1499.35	32.19	42.57		42.59	0.000341	1.45	1350.13	325.72	0.10
Robla Creek	Magpie to NEMDC	2.105	Max WS	Pre-Project 25yr	1711.16	32.19	43.28		43.30	0.000273	1.39	1584.13	330.79	0.09
Robla Creek	Magpie to NEMDC	2.105	Max WS	Pre-Project_50yr	1868.38	32.19	43.81		43.83	0.000235	1.35	1760.84	334.30	0.08
Robla Creek	Magpie to NEMDC	2.105	Max WS	Pre-Project_100yr	2043.91	32.19	44.37		44.39	0.000205	1.32	1947.65	338.13	0.08
Robla Creek	Magpie to NEMDC	2.105	Max WS	Pre-Project 200yr	2206.38	32.19	44.93		44.95	0.000179	1.29	2138.85	342.30	0.08
Robla Creek	Magpie to NEMDC	2.105	Max WS	Pre-Project 500yr	2349.28	32.19	45.84		45.85	0.000133	1.18	2451.86	349.05	0.07
Robla Creek	Magpie to NEMDC	2.105	Max WS	Post Project 500yr	2905.94	35.81	46.05		46.07	0.000202	1.18	2514.27	350.91	0.08
Robla Creek	Magpie to NEMDC	2.105	Max WS	Post Project 200 yr	2765.94	35.81	45.17		45.19	0.000274	1.26	2209.22	344.11	0.09
Robla Creek	Magpie to NEMDC	2.105	Max WS	Post Project 100yr	2409.46	35.81	44.53		44.55	0.000287	1.20	1991.05	339.35	0.09
Robla Creek	Magpie to NEMDC	2.105	Max WS	Post Project 50yr	2125.28	35.81	43.89		43.91	0.000320	1.17	1775.90	334.88	0.09
Robla Creek	Magpie to NEMDC	2.105	Max WS	Post Project 25yr	1865.21	35.81	43.34		43.36	0.000349	1.12	1590.37	331.09	0.10
Robla Creek	Magpie to NEMDC	2.105	Max WS	Post Project 10yr	1678.25	35.81	42.61		42.64	0.000469	1.15	1353.35	325.99	0.11
Robla Creek	Magpie to NEMDC	2.105	Max WS	Post Project 2yr	1216.67	35.81	41.52		41.54	0.000582	1.00	1005.32	311.71	0.11
Robla Creek	Magpie to NEMDC	2.025	Max WS	Pre-Project 2yr	1058.04	32.18	40.89		40.97	0.001143	2.46	506.61	186.86	0.18
Robla Creek	Magpie to NEMDC	2.025	Max WS	Pre-Project 10yr	1474.85	32.18	42.27		42.35	0.000859	2.45	819.33	281.06	0.16
Robla Creek	Magpie to NEMDC	2.025	Max WS	Pre-Project 25yr	1687.67	32.18	43.06		43.12	0.000633	2.25	1053.54	304.96	0.14
Robla Creek	Magpie to NEMDC	2.025	Max WS	Pre-Project_50yr	1863.57	32.18	43.63		43.68	0.000521	2.14	1228.77	309.39	0.13
Robla Creek	Magpie to NEMDC	2.025	Max WS	Pre-Project_100yr	2043.78	32.18	44.21		44.26	0.000433	2.04	1411.07	314.17	0.12
Robla Creek	Magpie to NEMDC	2.025	Max WS	Pre-Project 200yr	2205.64	32.18	44.80		44.84	0.000358	1.93	1596.81	318.90	0.11
Robla Creek	Magpie to NEMDC	2.025	Max WS	Pre-Project 500yr	2348.83	32.18	45.74		45.78	0.000248	1.70	1901.34	326.16	0.09
Robla Creek	Magpie to NEMDC	2.025	Max WS	Post Project 500yr	2905.91	32.18	45.91		45.96	0.000349	2.04	1955.98	327.34	0.11
Robla Creek	Magpie to NEMDC	2.025	Max WS	Post Project 200 yr	2760.84	32.18	44.98		45.03	0.000509	2.33	1653.14	320.27	0.13
Robla Creek	Magpie to NEMDC	2.025	Max WS	Post Project 100yr	2404.00	32.18	44.32		44.38	0.000561	2.34	1445.18	315.06	0.13
Robla Creek	Magpie to NEMDC	2.025	Max WS	Post Project 50yr	2104.43	32.18	43.65		43.72	0.000655	2.40	1236.00	309.58	0.14
Robla Creek	Magpie to	2.025	Max	Post Project 25yr	1854.12	32.18	43.06		43.13	0.000763	2.47	1054.22	304.98	0.15

	NEMDC		WS											
Robla Creek	Magpie to NEMDC	2.025	Max WS	Post Project 10yr	1607.34	32.18	42.23		42.32	0.001053	2.70	807.70	279.64	0.18
Robla Creek	Magpie to NEMDC	2.025	Max WS	Post Project 2yr	1215.19	32.18	41.04		41.14	0.001378	2.75	535.48	193.82	0.20
Robla Creek	Magpie to NEMDC	1.988	Max WS	Pre-Project 2yr	1054.09	32.58	40.66		40.75	0.001238	2.54	534.10	242.83	0.19
Robla Creek	Magpie to NEMDC	1.988	Max WS	Pre-Project 10yr	1459.01	32.58	42.14		42.19	0.000701	2.22	932.74	299.21	0.14
Robla Creek	Magpie to NEMDC	1.988	Max WS	Pre-Project 25yr	1671.58	32.58	42.96		43.01	0.000497	2.01	1185.09	309.27	0.12
Robla Creek	Magpie to NEMDC	1.988	Max WS	Pre-Project_50yr	1860.95	32.58	43.55		43.59	0.000415	1.92	1367.77	313.03	0.11
Robla Creek	Magpie to NEMDC	1.988	Max WS	Pre-Project_100yr	2043.76	32.58	44.15		44.18	0.000347	1.84	1556.17	316.96	0.11
Robla Creek	Magpie to NEMDC	1.988	Max WS	Pre-Project 200yr	2205.42	32.58	44.74		44.78	0.000289	1.75	1747.10	321.48	0.10
Robla Creek	Magpie to NEMDC	1.988	Max WS	Pre-Project 500yr	2348.87	32.58	45.71		45.73	0.000202	1.55	2059.74	329.13	0.08
Robla Creek	Magpie to NEMDC	1.988	Max WS	Post Project 500yr	2905.88	32.58	45.86		45.89	0.000288	1.87	2109.43	330.37	0.10
Robla Creek	Magpie to NEMDC	1.988	Max WS	Post Project 200 yr	2759.67	32.58	44.90		44.94	0.000417	2.12	1795.89	322.62	0.12
Robla Creek	Magpie to NEMDC	1.988	Max WS	Post Project 100yr	2402.18	32.58	44.23		44.28	0.000455	2.12	1583.90	317.61	0.12
Robla Creek	Magpie to NEMDC	1.988	Max WS	Post Project 50yr	2098.25	32.58	43.55		43.60	0.000526	2.17	1368.27	313.04	0.13
Robla Creek	Magpie to NEMDC	1.988	Max WS	Post Project 25yr	1846.84	32.58	42.94		43.00	0.000615	2.23	1178.93	309.15	0.14
Robla Creek	Magpie to NEMDC	1.988	Max WS	Post Project 10yr	1581.30	32.58	42.06		42.13	0.000859	2.44	911.04	288.09	0.16
Robla Creek	Magpie to NEMDC	1.988	Max WS	Post Project 2yr	1213.65	32.58	40.76		40.87	0.001496	2.83	559.66	246.19	0.20
Robla Creek	Magpie to NEMDC	1.930	Max WS	Pre-Project 2yr	1033.68	32.57	40.21		40.31	0.001670	2.70	478.19	369.72	0.21
Robla Creek	Magpie to NEMDC	1.930	Max WS	Pre-Project 10yr	1413.71	32.57	41.96		42.00	0.000563	1.90	1166.63	625.23	0.13
Robla Creek	Magpie to NEMDC	1.930	Max WS	Pre-Project 25yr	1664.55	32.57	42.85		42.87	0.000347	1.62	1578.67	639.79	0.10
Robla Creek	Magpie to NEMDC	1.930	Max WS	Pre-Project_50yr	1859.27	32.57	43.46		43.48	0.000267	1.50	1865.89	644.11	0.09
Robla Creek	Magpie to NEMDC	1.930	Max WS	Pre-Project_100yr	2043.72	32.57	44.08		44.09	0.000210	1.39	2156.94	648.53	0.08
Robla Creek	Magpie to NEMDC	1.930	Max WS	Pre-Project 200yr	2205.00	32.57	44.69		44.70	0.000167	1.29	2447.73	652.90	0.07
Robla Creek	Magpie to NEMDC	1.930	Max WS	Pre-Project 500yr	2348.90	32.57	45.67		45.68	0.000110	1.12	2916.44	660.41	0.06
Robla Creek	Magpie to NEMDC	1.930	Max WS	Post Project 500yr	2905.86	32.57	45.80		45.82	0.000158	1.35	2981.58	661.50	0.07
Robla Creek	Magpie to NEMDC	1.930	Max WS	Post Project 200 yr	2758.33	32.57	44.82		44.84	0.000242	1.57	2508.26	653.80	0.09
Robla Creek	Magpie to NEMDC	1.930	Max WS	Post Project 100yr	2401.19	32.57	44.14		44.17	0.000278	1.61	2187.93	649.00	0.09
Robla Creek	Magpie to NEMDC	1.930	Max WS	Post Project 50yr	2092.86	32.57	43.44		43.46	0.000345	1.70	1855.02	643.95	0.10
Robla Creek	Magpie to NEMDC	1.930	Max WS	Post Project 25yr	1822.09	32.57	42.80		42.83	0.000432	1.80	1556.34	639.43	0.11
Robla Creek	Magpie to NEMDC	1.930	Max WS	Post Project 10yr	1500.17	32.57	41.83		41.88	0.000722	2.13	1108.21	623.98	0.14
Robla Creek	Magpie to NEMDC	1.930	Max WS	Post Project 2yr	1205.47	32.57	40.14		40.29	0.002421	3.22	463.44	361.73	0.25
Robla Creek	Magpie to NEMDC	1.860	Max WS	Pre-Project 2yr	869.49	31.58	39.74		39.81	0.000995	2.16	425.18	777.70	0.16
Robla Creek	Magpie to NEMDC	1.860	Max WS	Pre-Project 10yr	1387.66	31.58	41.70		41.78	0.000795	2.38	632.34	799.51	0.15
Robla Creek	Magpie to NEMDC	1.860	Max WS	Pre-Project 25yr	1656.03	31.58	42.61		42.71	0.000821	2.61	880.35	804.97	0.16
Robla Creek	Magpie to NEMDC	1.860	Max WS	Pre-Project_50yr	1856.83	31.58	43.31		43.37	0.000536	2.22	1441.10	811.06	0.13
Robla Creek	Magpie to NEMDC	1.860	Max WS	Pre-Project_100yr	2043.65	31.58	43.98		44.01	0.000343	1.87	1987.60	818.35	0.11
Robla Creek	Magpie to NEMDC	1.860	Max WS	Pre-Project 200yr	2204.36	31.58	44.62		44.65	0.000227	1.59	2516.79	822.52	0.09
Robla Creek	Magpie to NEMDC	1.860	Max WS	Pre-Project 500yr	2348.81	31.58	45.63		45.65	0.000120	1.23	3350.43	826.15	0.06
Robla Creek	Magpie to NEMDC	1.860	Max WS	Post Project 500yr	2905.79	32.97	45.77		45.78	0.000113	1.19	4013.95	826.66	0.06
Robla Creek	Magpie to NEMDC	1.860	Max WS	Post Project 200 yr	2757.67	32.97	44.75		44.77	0.000204	1.50	3174.91	822.71	0.08
Robla Creek	Magpie to NEMDC	1.860	Max WS	Post Project 100yr	2400.13	32.97	44.06		44.08	0.000268	1.64	2605.98	818.86	0.09
Robla Creek	Magpie to NEMDC	1.860	Max WS	Post Project 50yr	2087.92	32.97	43.31		43.35	0.000401	1.90	2000.76	810.98	0.11
Robla Creek	Magpie to NEMDC	1.860	Max WS	Post Project 25yr	1786.80	32.97	42.62		42.67	0.000612	2.22	1438.22	805.04	0.14
Robla Creek	Magpie to NEMDC	1.860	Max WS	Post Project 10yr	1466.78	32.97	41.67		41.70	0.000373	1.59	1112.27	799.43	0.11
Robla Creek	Magpie to NEMDC	1.860	Max WS	Post Project 2yr	1133.35	32.97	39.64		39.69	0.001042	2.12	671.35	775.40	0.17
Robla Creek	Magpie to NEMDC	1.859	Max WS	Pre-Project 2yr	841.32	31.58	39.67	35.39	39.78	0.001607	2.71	309.95	150.25	0.20
Robla Creek	Magpie to NEMDC	1.859	Max WS	Pre-Project 10yr	1367.13	31.58	41.60	36.30	41.76	0.001729	3.23	423.71	650.58	0.22
Robla Creek	Magpie to NEMDC	1.859	Max WS	Pre-Project 25yr	1653.28	31.58	42.52	36.74	42.70	0.001755	3.43	482.20	771.36	0.22
Robla Creek	Magpie to NEMDC	1.859	Max WS	Pre-Project_50yr	1855.91	31.58	43.26	37.03	43.38	0.001203	2.99	1006.72	788.85	0.19
Robla Creek	Magpie to NEMDC	1.859	Max WS	Pre-Project_100yr	2043.63	31.58	43.95	37.29	44.02	0.000676	2.37	1559.01	792.58	0.14
Robla Creek	Magpie to NEMDC	1.859	Max WS	Pre-Project 200yr	2204.24	31.58	44.61	37.51	44.64	0.000404	1.92	2080.96	802.69	0.11
Robla Creek	Magpie to NEMDC	1.859	Max WS	Pre-Project 500yr	2348.82	31.58	45.63	37.69	45.64	0.000190	1.41	2905.56	815.66	0.08
Robla Creek	Magpie to NEMDC	1.859	Max WS	Post Project 500yr	2905.78	32.96	45.76		45.77	0.000211	1.50	3281.70	817.01	0.08
Robla Creek	Magpie to NEMDC	1.859	Max WS	Post Project 200 yr	2757.67	32.96	44.73		44.77	0.000435	2.00	2449.24	805.56	0.12
Robla Creek	Magpie to NEMDC	1.859	Max WS	Post Project 100yr	2400.12	32.96	44.03		44.09	0.000650	2.32	1888.82	793.70	0.14
Robla Creek	Magpie to NEMDC	1.859	Max WS	Post Project 50yr	2086.29	32.96	43.27		43.36	0.001144	2.89	1285.94	771.45	0.18
Robla Creek	Magpie to NEMDC	1.859	Max WS	Post Project 25yr	1782.69	32.96	42.58		42.66	0.000924	2.47	785.44	736.82	0.16
Robla Creek	Magpie to NEMDC	1.859	Max WS	Post Project 10yr	1454.07	32.96	41.62		41.69	0.000974	2.38	663.23	672.77	0.16
Robla Creek	Magpie to NEMDC	1.859	Max WS	Post Project 2yr	1110.21	32.96	39.56		39.67	0.001861	2.80	440.28	174.98	0.22
Robla Creek	Magpie to NEMDC	1.857 Bike Trail			Bridge									
Robla Creek	Magpie to NEMDC	1.855	Max WS	Pre-Project 2yr	771.39	31.69	39.56		39.66	0.001398	2.48	312.40	102.99	0.19
Robla Creek	Magpie to NEMDC	1.855	Max WS	Pre-Project 10yr	1338.12	31.69	41.50		41.64	0.001452	3.00	478.98	719.02	0.20
Robla Creek	Magpie to NEMDC	1.855	Max WS	Pre-Project 25yr	1649.99	31.69	42.44		42.58	0.001341	3.14	577.96	799.42	0.20
Robla Creek	Magpie to NEMDC	1.855	Max WS	Pre-Project_50yr	1854.66	31.69	43.18		43.29	0.001025	2.92	1060.69	803.51	0.18
Robla Creek	Magpie to NEMDC	1.855	Max WS	Pre-Project_100yr	2043.64	31.69	43.92		43.98	0.000565	2.29	1660.52	811.21	0.13
Robla Creek	Magpie to NEMDC	1.855	Max WS	Pre-Project 200yr	2203.87	31.69	44.58		44.62	0.000344	1.87	2199.05	818.74	0.10
Robla Creek	Magpie to NEMDC	1.855	Max WS	Pre-Project 500yr	2348.84	31.69	45.62		45.63	0.000164	1.38	3049.19	828.11	0.07
Robla Creek	Magpie to	1.855	Max	Post Project 500yr	2905.78	32.91	45.69		45.71	0.000164	1.39	3580.50	828.53	0.07

	NEMDC		WS											
Robla Creek	Magpie to NEMDC	1.855	Max WS	Post Project 200 yr	2757.67	32.91	44.68		44.71	0.000317	1.81	2746.95	819.75	0.10
Robla Creek	Magpie to NEMDC	1.855	Max WS	Post Project 100yr	2399.95	32.91	44.00		44.04	0.000442	2.03	2190.56	812.36	0.12
Robla Creek	Magpie to NEMDC	1.855	Max WS	Post Project 50yr	2086.61	32.91	43.24		43.31	0.000736	2.48	1580.09	803.88	0.15

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Robla Creek	Magpie to NEMDC	1.855	Max WS	Post Project 25yr	1777.62	32.91	42.49		42.54	0.000622	2.14	1061.33	799.60	0.14
Robla Creek	Magpie to NEMDC	1.855	Max WS	Post Project 10yr	1419.70	32.91	41.52		41.57	0.000771	2.17	846.81	727.55	0.15
Robla Creek	Magpie to NEMDC	1.855	Max WS	Post Project 2yr	868.69	32.91	39.40		39.46	0.001073	2.11	450.00	111.86	0.17
Robla Creek	Magpie to NEMDC	1.854	Max WS	Pre-Project 2yr	770.11	31.69	39.56		39.62	0.000999	2.12	401.44	790.64	0.16
Robla Creek	Magpie to NEMDC	1.854	Max WS	Pre-Project 10yr	1343.37	31.69	41.52		41.60	0.000865	2.44	618.04	800.44	0.16
Robla Creek	Magpie to NEMDC	1.854	Max WS	Pre-Project 25yr	1649.73	31.69	42.44		42.57	0.001122	3.01	750.29	805.16	0.19
Robla Creek	Magpie to NEMDC	1.854	Max WS	Pre-Project_50yr	1854.60	31.69	43.18		43.26	0.000669	2.47	1353.79	809.08	0.15
Robla Creek	Magpie to NEMDC	1.854	Max WS	Pre-Project_100yr	2043.62	31.69	43.92		43.96	0.000386	1.98	1952.41	815.81	0.11
Robla Creek	Magpie to NEMDC	1.854	Max WS	Pre-Project 200yr	2203.74	31.69	44.58		44.60	0.000247	1.65	2494.08	825.17	0.09
Robla Creek	Magpie to NEMDC	1.854	Max WS	Pre-Project 500yr	2348.85	31.69	45.61		45.63	0.000125	1.25	3350.03	830.57	0.07
Robla Creek	Magpie to NEMDC	1.854	Max WS	Post Project 500yr	2905.86	32.88	45.69		45.70	0.000113	1.20	4053.40	830.79	0.06
Robla Creek	Magpie to NEMDC	1.854	Max WS	Post Project 200 yr	2757.48	32.88	44.68		44.70	0.000203	1.51	3215.40	825.90	0.08
Robla Creek	Magpie to NEMDC	1.854	Max WS	Post Project 100yr	2399.95	32.88	44.00		44.02	0.000265	1.65	2655.75	817.15	0.09
Robla Creek	Magpie to NEMDC	1.854	Max WS	Post Project 50yr	2086.60	32.88	43.25		43.28	0.000402	1.92	2044.25	809.41	0.11
Robla Creek	Magpie to NEMDC	1.854	Max WS	Post Project 25yr	1776.66	32.88	42.47		42.53	0.000680	2.35	1418.86	805.30	0.15
Robla Creek	Magpie to NEMDC	1.854	Max WS	Post Project 10yr	1422.93	32.88	41.53		41.55	0.000343	1.53	1148.12	800.17	0.10
Robla Creek	Magpie to NEMDC	1.854	Max WS	Post Project 2yr	872.10	32.88	39.41		39.44	0.000683	1.70	664.49	789.85	0.14
Robla Creek	Magpie to NEMDC	1.851			Lat Struct									
Robla Creek	Magpie to NEMDC	1.815	Max WS	Pre-Project 2yr	1273.21	29.36	39.46		39.48	0.000304	1.53	1606.91	749.02	0.10
Robla Creek	Magpie to NEMDC	1.815	Max WS	Pre-Project 10yr	2535.58	29.36	41.45		41.47	0.000185	1.39	3098.92	751.99	0.08
Robla Creek	Magpie to NEMDC	1.815	Max WS	Pre-Project 25yr	2948.40	29.36	42.37		42.38	0.000134	1.25	3790.02	753.56	0.07
Robla Creek	Magpie to NEMDC	1.815	Max WS	Pre-Project_50yr	3256.67	29.36	43.13		43.14	0.000105	1.16	4366.39	754.95	0.06
Robla Creek	Magpie to NEMDC	1.815	Max WS	Pre-Project_100yr	3645.75	29.36	43.88		43.89	0.000089	1.12	4933.23	757.81	0.06
Robla Creek	Magpie to NEMDC	1.815	Max WS	Pre-Project 200yr	3973.43	29.36	44.55		44.56	0.000078	1.08	5441.30	770.64	0.05
Robla Creek	Magpie to NEMDC	1.815	Max WS	Pre-Project 500yr	4158.30	29.36	45.59		45.60	0.000055	0.95	6265.90	800.45	0.04
Robla Creek	Magpie to NEMDC	1.815	Max WS	Post Project 500yr	4638.90	29.36	45.67		45.68	0.000066	1.05	6327.46	800.81	0.05
Robla Creek	Magpie to NEMDC	1.815	Max WS	Post Project 200 yr	4441.53	29.36	44.65		44.66	0.000093	1.18	5518.17	775.11	0.06
Robla Creek	Magpie to NEMDC	1.815	Max WS	Post Project 100yr	3952.84	29.36	43.97		43.98	0.000101	1.19	4995.05	758.37	0.06
Robla Creek	Magpie to NEMDC	1.815	Max WS	Post Project 50yr	3467.60	29.36	43.21		43.22	0.000114	1.22	4420.07	755.08	0.06
Robla Creek	Magpie to NEMDC	1.815	Max WS	Post Project 25yr	3061.78	29.36	42.41		42.43	0.000141	1.29	3823.21	753.64	0.07
Robla Creek	Magpie to NEMDC	1.815	Max WS	Post Project 10yr	2617.24	29.36	41.47		41.49	0.000194	1.42	3115.32	752.02	0.08
Robla Creek	Magpie to NEMDC	1.815	Max WS	Post Project 2yr	1208.12	29.36	39.32		39.34	0.000326	1.57	1498.24	748.78	0.10
Robla Creek	Magpie to NEMDC	1.750	Max WS	Pre-Project 2yr	1760.25	29.03	39.22		39.28	0.000924	2.42	1353.94	715.87	0.16
Robla Creek	Magpie to NEMDC	1.750	Max WS	Pre-Project 10yr	3495.83	29.03	41.32		41.35	0.000438	1.98	2863.68	721.49	0.12
Robla Creek	Magpie to NEMDC	1.750	Max WS	Pre-Project 25yr	3967.87	29.03	42.28		42.30	0.000288	1.72	3556.05	724.19	0.10
Robla Creek	Magpie to NEMDC	1.750	Max WS	Pre-Project_50yr	4532.20	29.03	43.06		43.08	0.000236	1.64	4119.84	726.31	0.09
Robla Creek	Magpie to NEMDC	1.750	Max WS	Pre-Project_100yr	5206.88	29.03	43.81		43.83	0.000209	1.61	4669.51	728.49	0.08
Robla Creek	Magpie to NEMDC	1.750	Max WS	Pre-Project 200yr	5697.81	29.03	44.49		44.51	0.000182	1.56	5161.00	730.64	0.08
Robla Creek	Magpie to NEMDC	1.750	Max WS	Pre-Project 500yr	5886.43	29.03	45.55		45.56	0.000124	1.36	5938.33	734.89	0.07
Robla Creek	Magpie to NEMDC	1.750	Max WS	Post Project 500yr	6305.90	29.03	45.62		45.64	0.000138	1.44	5991.15	735.18	0.07
Robla Creek	Magpie to NEMDC	1.750	Max WS	Post Project 200 yr	6090.58	29.03	44.58		44.60	0.000199	1.64	5229.31	730.99	0.08
Robla Creek	Magpie to NEMDC	1.750	Max WS	Post Project 100yr	5462.62	29.03	43.89		43.91	0.000222	1.67	4725.82	728.74	0.09
Robla Creek	Magpie to NEMDC	1.750	Max WS	Post Project 50yr	4710.14	29.03	43.13		43.15	0.000246	1.68	4169.10	726.50	0.09
Robla Creek	Magpie to NEMDC	1.750	Max WS	Post Project 25yr	4062.44	29.03	42.32		42.35	0.000294	1.74	3586.41	724.31	0.10
Robla Creek	Magpie to NEMDC	1.750	Max WS	Post Project 10yr	3557.19	29.03	41.34		41.37	0.000447	2.01	2877.16	721.54	0.12
Robla Creek	Magpie to NEMDC	1.750	Max WS	Post Project 2yr	1579.39	29.03	39.07		39.13	0.000908	2.36	1248.07	715.48	0.16
Robla Creek	Magpie to NEMDC	1.655	Max WS	Pre-Project 2yr	2038.89	29.61	38.89		38.92	0.000404	1.74	1867.28	561.65	0.11
Robla Creek	Magpie to NEMDC	1.655	Max WS	Pre-Project 10yr	4872.42	29.61	41.04		41.09	0.000509	2.29	3082.18	567.77	0.13
Robla Creek	Magpie to NEMDC	1.655	Max WS	Pre-Project 25yr	6590.06	29.61	42.00		42.05	0.000561	2.55	3623.95	570.52	0.14
Robla Creek	Magpie to NEMDC	1.655	Max WS	Pre-Project_50yr	8094.99	29.61	42.76		42.82	0.000591	2.74	4060.15	573.00	0.14
Robla Creek	Magpie to NEMDC	1.655	Max WS	Pre-Project_100yr	9629.10	29.61	43.50		43.57	0.000610	2.90	4485.29	575.38	0.14
Robla Creek	Magpie to NEMDC	1.655	Max WS	Pre-Project 200yr	10480.34	29.61	44.19		44.27	0.000552	2.86	4884.97	577.89	0.14
Robla Creek	Magpie to NEMDC	1.655	Max WS	Pre-Project 500yr	10564.82	29.61	45.34		45.40	0.000374	2.49	5549.53	582.37	0.12
Robla Creek	Magpie to NEMDC	1.655	Max WS	Post Project 500yr	10919.23	29.61	45.40		45.46	0.000392	2.55	5585.40	582.60	0.12
Robla Creek	Magpie to NEMDC	1.655	Max WS	Post Project 200 yr	10831.63	29.61	44.27		44.35	0.000572	2.92	4932.03	578.20	0.14
Robla Creek	Magpie to NEMDC	1.655	Max WS	Post Project 100yr	9869.86	29.61	43.57		43.65	0.000623	2.94	4525.31	575.60	0.15
Robla Creek	Magpie to NEMDC	1.655	Max WS	Post Project 50yr	8268.46	29.61	42.82		42.89	0.000600	2.77	4095.89	573.21	0.14
Robla Creek	Magpie to NEMDC	1.655	Max WS	Post Project 25yr	6671.93	29.61	42.04		42.09	0.000564	2.56	3646.60	570.64	0.14
Robla Creek	Magpie to NEMDC	1.655	Max WS	Post Project 10yr	4907.45	29.61	41.06		41.10	0.000512	2.30	3091.50	567.81	0.13
Robla Creek	Magpie to NEMDC	1.655	Max WS	Post Project 2yr	1880.48	29.61	38.75		38.77	0.000389	1.68	1788.50	561.23	0.11

Robla Creek	Magpie to NEMDC	1.599	Max WS	Pre-Project 2yr	2131.67	28.59	38.61		38.74	0.001423	3.39	929.75	515.63	0.21
Robla Creek	Magpie to NEMDC	1.599	Max WS	Pre-Project 10yr	5484.40	28.59	40.54		40.80	0.002569	5.26	1715.91	521.45	0.29
Robla Creek	Magpie to NEMDC	1.599	Max WS	Pre-Project 25yr	7589.89	28.59	41.46		41.74	0.002632	5.64	2194.85	523.11	0.30
Robla Creek	Magpie to NEMDC	1.599	Max WS	Pre-Project_50yr	9383.00	28.59	42.21		42.50	0.002544	5.80	2592.06	524.37	0.30
Robla Creek	Magpie to NEMDC	1.599	Max WS	Pre-Project_100yr	11120.28	28.59	42.96		43.25	0.002386	5.86	2984.24	525.84	0.29
Robla Creek	Magpie to NEMDC	1.599	Max WS	Pre-Project 200yr	11700.87	28.59	43.75		43.98	0.001800	5.30	3400.27	527.86	0.26
Robla Creek	Magpie to NEMDC	1.599	Max WS	Pre-Project 500yr	12023.05	28.59	45.06		45.22	0.001088	4.39	4093.27	531.65	0.20
Robla Creek	Magpie to NEMDC	1.599	Max WS	Post Project 500yr	12385.97	28.59	45.11		45.28	0.001132	4.49	4119.91	531.83	0.21
Robla Creek	Magpie to NEMDC	1.599	Max WS	Post Project 200 yr	12164.53	28.59	43.82		44.06	0.001888	5.45	3434.63	528.03	0.26
Robla Creek	Magpie to NEMDC	1.599	Max WS	Post Project 100yr	11377.42	28.59	43.02		43.31	0.002422	5.92	3015.89	525.97	0.30
Robla Creek	Magpie to NEMDC	1.599	Max WS	Post Project 50yr	9575.01	28.59	42.27		42.56	0.002565	5.85	2621.81	524.45	0.30
Robla Creek	Magpie to NEMDC	1.599	Max WS	Post Project 25yr	7677.87	28.59	41.50		41.78	0.002625	5.65	2215.82	523.16	0.30
Robla Creek	Magpie to NEMDC	1.599	Max WS	Post Project 10yr	5519.60	28.59	40.55		40.82	0.002573	5.27	1723.93	521.47	0.29
Robla Creek	Magpie to NEMDC	1.599	Max WS	Post Project 2yr	1972.41	28.59	38.48		38.61	0.001345	3.26	884.48	515.24	0.20
Robla Creek	Magpie to NEMDC	1.598	Max WS	Pre-Project 2yr	2131.64	28.59	38.64	33.42	38.69	0.000512	2.08	1523.69	462.37	0.13
Robla Creek	Magpie to NEMDC	1.598	Max WS	Pre-Project 10yr	5484.43	28.59	40.59	36.12	40.70	0.000979	3.32	2461.08	501.81	0.18
Robla Creek	Magpie to NEMDC	1.598	Max WS	Pre-Project 25yr	7590.15	28.59	41.50	37.13	41.64	0.001168	3.84	2924.76	521.10	0.20
Robla Creek	Magpie to NEMDC	1.598	Max WS	Pre-Project_50yr	9384.79	28.59	42.25	37.93	42.41	0.001247	4.14	3322.34	533.93	0.21
Robla Creek	Magpie to NEMDC	1.598	Max WS	Pre-Project_100yr	11127.69	28.59	43.00	38.37	43.17	0.001268	4.35	3723.47	546.88	0.22
Robla Creek	Magpie to NEMDC	1.598	Max WS	Pre-Project 200yr	11811.15	28.59	43.78	38.49	43.93	0.001052	4.12	4155.74	565.19	0.20
Robla Creek	Magpie to NEMDC	1.598	Max WS	Pre-Project 500yr	12025.95	28.59	45.07	38.54	45.19	0.000746	3.69	4942.75	668.50	0.17
Robla Creek	Magpie to NEMDC	1.598	Max WS	Post Project 500yr	12395.05	28.59	45.12	38.61	45.25	0.000776	3.78	4976.78	668.66	0.17
Robla Creek	Magpie to NEMDC	1.598	Max WS	Post Project 200 yr	12176.62	28.59	43.84	38.57	44.00	0.001090	4.21	4193.35	566.45	0.20
Robla Creek	Magpie to NEMDC	1.598	Max WS	Post Project 100yr	11387.96	28.59	43.06	38.43	43.23	0.001295	4.41	3756.74	547.63	0.22
Robla Creek	Magpie to NEMDC	1.598	Max WS	Post Project 50yr	9576.53	28.59	42.31	37.98	42.47	0.001265	4.19	3352.76	534.81	0.21
Robla Creek	Magpie to NEMDC	1.598	Max WS	Post Project 25yr	7678.44	28.59	41.54	37.16	41.68	0.001173	3.85	2945.47	522.12	0.20
Robla Creek	Magpie to NEMDC	1.598	Max WS	Post Project 10yr	5519.65	28.59	40.61	36.14	40.71	0.000983	3.33	2468.79	501.97	0.18
Robla Creek	Magpie to NEMDC	1.598	Max WS	Post Project 2yr	1972.44	28.59	38.51	33.23	38.56	0.000481	2.00	1465.32	458.41	0.12
Robla Creek	Magpie to NEMDC	1.593 Rio Linda Blvd			Bridge									
Robla Creek	Magpie to NEMDC	1.584	Max WS	Pre-Project 2yr	2131.55	29.46	38.53		38.59	0.000676	2.21	1152.27	341.93	0.14
Robla Creek	Magpie to NEMDC	1.584	Max WS	Pre-Project 10yr	5484.24	29.46	40.29		40.47	0.001598	3.93	1857.52	426.36	0.23
Robla Creek	Magpie to NEMDC	1.584	Max WS	Pre-Project 25yr	7583.07	29.46	41.11		41.35	0.001982	4.64	2212.84	441.88	0.26
Robla Creek	Magpie to NEMDC	1.584	Max WS	Pre-Project_50yr	9349.44	29.46	41.81		42.09	0.002137	5.04	2532.15	471.29	0.27
Robla Creek	Magpie to NEMDC	1.584	Max WS	Pre-Project_100yr	10870.77	29.46	42.53		42.83	0.002139	5.27	2885.77	511.61	0.28
Robla Creek	Magpie to NEMDC	1.584	Max WS	Pre-Project 200yr	11281.77	29.46	43.40		43.64	0.001579	4.76	3338.64	535.27	0.24
Robla Creek	Magpie to NEMDC	1.584	Max WS	Pre-Project 500yr	11800.36	29.46	44.80		44.97	0.001019	4.11	4145.81	622.26	0.20
Robla Creek	Magpie to NEMDC	1.584	Max WS	Post Project 500yr	12167.36	29.46	44.84		45.02	0.001068	4.21	4168.40	623.84	0.20
Robla Creek	Magpie to NEMDC	1.584	Max WS	Post Project 200 yr	11714.90	29.46	43.45		43.70	0.001672	4.91	3362.71	537.35	0.25

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Robla Creek	Magpie to NEMDC	1.584	Max WS	Post Project 100yr	11170.12	29.46	42.58		42.89	0.002211	5.37	2909.87	512.99	0.28
Robla Creek	Magpie to NEMDC	1.584	Max WS	Post Project 50yr	9540.54	29.46	41.86		42.15	0.002177	5.10	2554.29	476.29	0.28
Robla Creek	Magpie to NEMDC	1.584	Max WS	Post Project 25yr	7671.82	29.46	41.14		41.39	0.001992	4.66	2229.40	443.08	0.26
Robla Creek	Magpie to NEMDC	1.584	Max WS	Post Project 10yr	5519.41	29.46	40.30		40.48	0.001606	3.94	1863.37	426.53	0.23
Robla Creek	Magpie to NEMDC	1.584	Max WS	Post Project 2yr	1972.36	29.46	38.41		38.47	0.000619	2.09	1113.80	328.35	0.14
Robla Creek	Magpie to NEMDC	1.583	Max WS	Pre-Project 2yr	2131.51	29.46	38.41		38.52	0.001155	2.71	929.75	537.85	0.19
Robla Creek	Magpie to NEMDC	1.583	Max WS	Pre-Project 10yr	5483.93	29.46	40.01		40.29	0.002630	4.73	1577.11	666.45	0.29
Robla Creek	Magpie to NEMDC	1.583	Max WS	Pre-Project 25yr	7574.57	29.46	40.78		41.13	0.003078	5.43	1917.22	669.68	0.32
Robla Creek	Magpie to NEMDC	1.583	Max WS	Pre-Project_50yr	9259.23	29.46	41.43		41.86	0.003537	6.10	2304.26	672.39	0.35
Robla Creek	Magpie to NEMDC	1.583	Max WS	Pre-Project_100yr	10662.65	29.46	42.25		42.60	0.002760	5.69	2860.06	675.11	0.31
Robla Creek	Magpie to NEMDC	1.583	Max WS	Pre-Project 200yr	11249.15	29.46	43.24		43.47	0.001752	4.81	3527.12	678.71	0.25
Robla Creek	Magpie to NEMDC	1.583	Max WS	Pre-Project 500yr	11795.79	29.46	44.73		44.86	0.000936	3.81	4539.11	684.12	0.19
Robla Creek	Magpie to NEMDC	1.583	Max WS	Post Project 500yr	12154.99	29.46	44.76		44.90	0.000979	3.91	4561.42	684.22	0.19
Robla Creek	Magpie to NEMDC	1.583	Max WS	Post Project 200 yr	11520.01	29.46	43.28		43.52	0.001799	4.89	3553.69	678.88	0.25
Robla Creek	Magpie to NEMDC	1.583	Max WS	Post Project 100yr	10893.99	29.46	42.30		42.65	0.002811	5.75	2887.57	675.24	0.31
Robla Creek	Magpie to NEMDC	1.583	Max WS	Post Project 50yr	9460.43	29.46	41.47		41.91	0.003587	6.16	2333.32	672.56	0.35
Robla Creek	Magpie to NEMDC	1.583	Max WS	Post Project 25yr	7663.17	29.46	40.81		41.16	0.003099	5.46	1929.47	669.80	0.32
Robla Creek	Magpie to NEMDC	1.583	Max WS	Post Project 10yr	5518.93	29.46	40.02		40.30	0.002642	4.74	1582.49	666.51	0.29
Robla Creek	Magpie to NEMDC	1.583	Max WS	Post Project 2yr	1972.23	29.46	38.31		38.40	0.001062	2.57	897.26	529.68	0.18
Robla Creek	Magpie to NEMDC	1.536			Lat Struct									
Robla Creek	Magpie to NEMDC	1.530	Max WS	Pre-Project 2yr	2131.25	26.66	38.22		38.32	0.001161	2.89	1180.27	694.38	0.19
Robla Creek	Magpie to NEMDC	1.530	Max WS	Pre-Project 10yr	5483.54	26.66	39.72		39.88	0.001837	4.10	2227.71	699.91	0.24
Robla Creek	Magpie to NEMDC	1.530	Max WS	Pre-Project 25yr	7559.32	26.66	40.48		40.65	0.001934	4.44	2761.30	701.75	0.25
Robla Creek	Magpie to NEMDC	1.530	Max WS	Pre-Project_50yr	9151.54	26.66	41.14		41.31	0.001806	4.49	3226.82	703.59	0.25
Robla Creek	Magpie to NEMDC	1.530	Max WS	Pre-Project_100yr	10478.60	26.66	42.03		42.18	0.001391	4.16	3855.16	706.00	0.22
Robla Creek	Magpie to	1.530	Max	Pre-Project 200yr	11083.88	26.66	43.10		43.21	0.000899	3.55	4610.67	709.45	0.18

	NEMDC		WS											
Robla Creek	Magpie to NEMDC	1.530	Max WS	Pre-Project 500yr	11791.16	26.66	44.65		44.72	0.000521	2.92	5712.85	713.55	0.14
Robla Creek	Magpie to NEMDC	1.530	Max WS	Post Project 500yr	12154.72	26.66	44.68		44.76	0.000547	3.00	5733.44	713.64	0.14
Robla Creek	Magpie to NEMDC	1.530	Max WS	Post Project 200 yr	11341.58	26.66	43.13		43.24	0.000927	3.61	4634.00	709.56	0.18
Robla Creek	Magpie to NEMDC	1.530	Max WS	Post Project 100yr	10704.88	26.66	42.07		42.22	0.001424	4.22	3879.82	706.09	0.22
Robla Creek	Magpie to NEMDC	1.530	Max WS	Post Project 50yr	9353.24	26.66	41.18		41.36	0.001842	4.54	3253.57	703.70	0.25
Robla Creek	Magpie to NEMDC	1.530	Max WS	Post Project 25yr	7647.43	26.66	40.50		40.68	0.001943	4.46	2779.26	701.81	0.25
Robla Creek	Magpie to NEMDC	1.530	Max WS	Post Project 10yr	5518.16	26.66	39.73		39.89	0.001843	4.11	2235.71	699.93	0.24
Robla Creek	Magpie to NEMDC	1.530	Max WS	Post Project 2yr	1972.02	26.66	38.12		38.22	0.001099	2.79	1113.87	693.14	0.18
Robla Creek	Magpie to NEMDC	1.472	Max WS	Pre-Project 2yr	2066.90	27.00	37.80		37.89	0.001720	2.98	1326.75	953.81	0.22
Robla Creek	Magpie to NEMDC	1.472	Max WS	Pre-Project 10yr	5307.67	27.00	39.25		39.33	0.001655	3.37	2730.62	973.78	0.22
Robla Creek	Magpie to NEMDC	1.472	Max WS	Pre-Project 25yr	7354.01	27.00	40.03		40.12	0.001509	3.44	3489.21	976.02	0.21
Robla Creek	Magpie to NEMDC	1.472	Max WS	Pre-Project_50yr	8821.25	27.00	40.76		40.84	0.001216	3.27	4201.14	978.13	0.19
Robla Creek	Magpie to NEMDC	1.472	Max WS	Pre-Project_100yr	10129.12	27.00	41.76		41.83	0.000820	2.88	5188.59	981.09	0.16
Robla Creek	Magpie to NEMDC	1.472	Max WS	Pre-Project 200yr	11108.90	27.00	42.93		42.98	0.000519	2.47	6337.65	984.92	0.13
Robla Creek	Magpie to NEMDC	1.472	Max WS	Pre-Project 500yr	12033.92	27.00	44.56		44.59	0.000293	2.03	7941.42	990.23	0.10
Robla Creek	Magpie to NEMDC	1.472	Max WS	Post Project 500yr	12390.94	27.00	44.58		44.62	0.000308	2.09	7965.55	990.31	0.10
Robla Creek	Magpie to NEMDC	1.472	Max WS	Post Project 200 yr	11368.38	27.00	42.96		43.01	0.000536	2.51	6365.10	985.01	0.13
Robla Creek	Magpie to NEMDC	1.472	Max WS	Post Project 100yr	10393.20	27.00	41.79		41.86	0.000849	2.94	5215.98	981.18	0.16
Robla Creek	Magpie to NEMDC	1.472	Max WS	Post Project 50yr	9018.59	27.00	40.79		40.87	0.001242	3.31	4231.97	978.22	0.20
Robla Creek	Magpie to NEMDC	1.472	Max WS	Post Project 25yr	7441.47	27.00	40.05		40.14	0.001514	3.45	3512.75	976.09	0.21
Robla Creek	Magpie to NEMDC	1.472	Max WS	Post Project 10yr	5340.73	27.00	39.26		39.34	0.001658	3.37	2740.84	973.81	0.22
Robla Creek	Magpie to NEMDC	1.472	Max WS	Post Project 2yr	1918.86	27.00	37.72		37.80	0.001699	2.95	1245.69	952.65	0.21
Robla Creek	Magpie to NEMDC	1.372	Max WS	Pre-Project 2yr	2152.07	26.83	37.07		37.16	0.001282	2.95	1463.89	1117.62	0.19
Robla Creek	Magpie to NEMDC	1.372	Max WS	Pre-Project 10yr	5614.56	26.83	38.53		38.61	0.001373	3.44	3094.11	1122.18	0.20
Robla Creek	Magpie to NEMDC	1.372	Max WS	Pre-Project 25yr	7564.46	26.83	39.41		39.49	0.001094	3.28	4091.15	1124.84	0.19
Robla Creek	Magpie to NEMDC	1.372	Max WS	Pre-Project_50yr	8856.12	26.83	40.31		40.36	0.000764	2.91	5094.79	1127.61	0.16
Robla Creek	Magpie to NEMDC	1.372	Max WS	Pre-Project_100yr	10259.27	26.83	41.47		41.52	0.000498	2.51	6411.45	1131.29	0.13
Robla Creek	Magpie to NEMDC	1.372	Max WS	Pre-Project 200yr	11359.99	26.83	42.75		42.79	0.000318	2.15	7861.42	1135.34	0.11
Robla Creek	Magpie to NEMDC	1.372	Max WS	Pre-Project 500yr	12625.34	26.83	44.45		44.48	0.000193	1.82	9795.33	1140.72	0.08
Robla Creek	Magpie to NEMDC	1.372	Max WS	Post Project 500yr	13001.62	26.83	44.47		44.50	0.000204	1.87	9815.79	1140.78	0.09
Robla Creek	Magpie to NEMDC	1.372	Max WS	Post Project 200 yr	11621.77	26.83	42.77		42.81	0.000330	2.19	7884.41	1135.41	0.11
Robla Creek	Magpie to NEMDC	1.372	Max WS	Post Project 100yr	10372.64	26.83	41.49		41.54	0.000503	2.53	6435.40	1131.36	0.13
Robla Creek	Magpie to NEMDC	1.372	Max WS	Post Project 50yr	9031.31	26.83	40.33		40.39	0.000783	2.94	5120.27	1127.68	0.16
Robla Creek	Magpie to NEMDC	1.372	Max WS	Post Project 25yr	7676.02	26.83	39.44		39.51	0.001106	3.30	4116.19	1124.90	0.19
Robla Creek	Magpie to NEMDC	1.372	Max WS	Post Project 10yr	5658.03	26.83	38.53		38.62	0.001383	3.46	3102.83	1122.20	0.21
Robla Creek	Magpie to NEMDC	1.372	Max WS	Post Project 2yr	2022.94	26.83	36.99		37.09	0.001279	2.92	1374.96	1117.26	0.19
Robla Creek	Magpie to NEMDC	1.248	Max WS	Pre-Project 2yr	2331.63	26.28	36.27		36.33	0.001303	2.61	1803.25	1262.97	0.18
Robla Creek	Magpie to NEMDC	1.248	Max WS	Pre-Project 10yr	6069.06	26.28	37.71		37.76	0.001255	2.92	3767.38	1392.10	0.18
Robla Creek	Magpie to NEMDC	1.248	Max WS	Pre-Project 25yr	7986.56	26.28	38.86		38.90	0.000716	2.42	5379.71	1395.70	0.14
Robla Creek	Magpie to NEMDC	1.248	Max WS	Pre-Project_50yr	9295.48	26.28	39.95		39.98	0.000438	2.04	6895.00	1399.07	0.11
Robla Creek	Magpie to NEMDC	1.248	Max WS	Pre-Project_100yr	10601.26	26.28	41.25		41.27	0.000266	1.72	8721.08	1402.56	0.09
Robla Creek	Magpie to NEMDC	1.248	Max WS	Pre-Project 200yr	11876.56	26.28	42.61		42.63	0.000175	1.50	10628.89	1406.20	0.07
Robla Creek	Magpie to NEMDC	1.248	Max WS	Pre-Project 500yr	13421.05	26.28	44.36		44.38	0.000113	1.31	13099.34	1411.29	0.06
Robla Creek	Magpie to NEMDC	1.248	Max WS	Post Project 500yr	13807.92	26.28	44.38		44.39	0.000119	1.35	13118.19	1411.33	0.06
Robla Creek	Magpie to NEMDC	1.248	Max WS	Post Project 200 yr	12156.94	26.28	42.62		42.64	0.000182	1.53	10649.62	1406.24	0.08
Robla Creek	Magpie to NEMDC	1.248	Max WS	Post Project 100yr	10779.90	26.28	41.27		41.29	0.000273	1.74	8743.31	1402.61	0.09
Robla Creek	Magpie to NEMDC	1.248	Max WS	Post Project 50yr	9440.84	26.28	39.96		39.99	0.000448	2.06	6915.90	1399.11	0.11
Robla Creek	Magpie to NEMDC	1.248	Max WS	Post Project 25yr	8105.38	26.28	38.88		38.92	0.000729	2.44	5398.75	1395.75	0.14
Robla Creek	Magpie to NEMDC	1.248	Max WS	Post Project 10yr	6125.09	26.28	37.70		37.76	0.001286	2.96	3760.23	1392.09	0.18
Robla Creek	Magpie to NEMDC	1.248	Max WS	Post Project 2yr	2188.03	26.28	36.20		36.26	0.001288	2.58	1714.34	1239.64	0.18
Robla Creek	Magpie to NEMDC	1.132	Max WS	Pre-Project 2yr	2330.79	25.74	35.37		35.43	0.001832	2.59	1625.62	1203.12	0.20
Robla Creek	Magpie to NEMDC	1.132	Max WS	Pre-Project 10yr	5596.99	25.74	37.04		37.08	0.001054	2.38	3822.75	1433.41	0.16
Robla Creek	Magpie to NEMDC	1.132	Max WS	Pre-Project 25yr	7682.38	25.74	38.53		38.55	0.000503	1.87	5964.52	1448.18	0.12
Robla Creek	Magpie to NEMDC	1.132	Max WS	Pre-Project_50yr	9079.91	25.74	39.74		39.77	0.000304	1.60	7730.32	1451.08	0.09
Robla Creek	Magpie to NEMDC	1.132	Max WS	Pre-Project_100yr	10426.34	25.74	41.13		41.14	0.000189	1.38	9739.28	1455.29	0.07
Robla Creek	Magpie to NEMDC	1.132	Max WS	Pre-Project 200yr	11791.88	25.74	42.53		42.54	0.000131	1.25	11784.22	1469.29	0.06
Robla Creek	Magpie to NEMDC	1.132	Max WS	Pre-Project 500yr	13674.09	25.74	44.31		44.32	0.000093	1.15	14451.01	1511.56	0.05
Robla Creek	Magpie to NEMDC	1.132	Max WS	Post Project 500yr	14049.55	25.74	44.32		44.33	0.000098	1.18	14466.92	1511.60	0.06
Robla Creek	Magpie to NEMDC	1.132	Max WS	Post Project 200 yr	12066.55	25.74	42.54		42.55	0.000137	1.27	11800.18	1469.42	0.06
Robla Creek	Magpie to NEMDC	1.132	Max WS	Post Project 100yr	10632.64	25.74	41.14		41.16	0.000196	1.41	9756.29	1455.34	0.08
Robla Creek	Magpie to NEMDC	1.132	Max WS	Post Project 50yr	9200.99	25.74	39.75		39.78	0.000311	1.62	7745.26	1451.10	0.09
Robla Creek	Magpie to NEMDC	1.132	Max WS	Post Project 25yr	7762.95	25.74	38.53		38.56	0.000510	1.89	5977.08	1448.19	0.12
Robla Creek	Magpie to NEMDC	1.132	Max WS	Post Project 10yr	5539.83	25.74	37.02		37.06	0.001066	2.38	3783.07	1432.91	0.16
Robla Creek	Magpie to NEMDC	1.132	Max WS	Post Project 2yr	2187.36	25.74	35.30		35.35	0.001825	2.56	1539.48	1197.63	0.20
Robla Creek	Magpie to NEMDC	1.030	Max WS	Pre-Project 2yr	2329.08	26.23	34.59		34.63	0.001141	2.21	1904.02	1300.58	0.17
Robla Creek	Magpie to NEMDC	1.030	Max WS	Pre-Project 10yr	5332.61	26.23	36.65		36.68	0.000478	1.77	4835.13	1496.10	0.11
Robla Creek	Magpie to NEMDC	1.030	Max WS	Pre-Project 25yr	7476.07	26.23	38.34		38.36	0.000249	1.46	7357.83	1503.60	0.08

Robla Creek	Magpie to NEMDC	1.030	Max WS	Pre-Project_50yr	8894.65	26.23	39.63		39.64	0.000165	1.30	9302.62	1520.13	0.07
Robla Creek	Magpie to NEMDC	1.030	Max WS	Pre-Project_100yr	10389.40	26.23	41.05		41.06	0.000114	1.18	11493.88	1546.67	0.06
Robla Creek	Magpie to NEMDC	1.030	Max WS	Pre-Project 200yr	11793.88	26.23	42.47		42.48	0.000083	1.08	13696.26	1551.75	0.05
Robla Creek	Magpie to NEMDC	1.030	Max WS	Pre-Project 500yr	13705.46	26.23	44.27		44.28	0.000062	1.01	16484.89	1555.84	0.05
Robla Creek	Magpie to NEMDC	1.030	Max WS	Post Project 500yr	14074.90	26.23	44.28		44.29	0.000065	1.04	16498.28	1555.86	0.05
Robla Creek	Magpie to NEMDC	1.030	Max WS	Post Project 200 yr	12065.67	26.23	42.48		42.49	0.000087	1.11	13709.63	1551.77	0.05

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Robla Creek	Magpie to NEMDC	1.030	Max WS	Post Project 100yr	10590.36	26.23	41.06		41.07	0.000118	1.20	11508.02	1546.71	0.06
Robla Creek	Magpie to NEMDC	1.030	Max WS	Post Project 50yr	9005.55	26.23	39.63		39.65	0.000169	1.31	9314.30	1520.67	0.07
Robla Creek	Magpie to NEMDC	1.030	Max WS	Post Project 25yr	7538.28	26.23	38.34		38.36	0.000252	1.47	7366.40	1503.64	0.09
Robla Creek	Magpie to NEMDC	1.030	Max WS	Post Project 10yr	5250.02	26.23	36.63		36.65	0.000476	1.76	4793.68	1496.03	0.11
Robla Creek	Magpie to NEMDC	1.030	Max WS	Post Project 2yr	2186.53	26.23	34.51		34.56	0.001140	2.19	1807.18	1290.74	0.17
Robla Creek	Magpie to NEMDC	0.917 ARN-G	Max WS	Pre-Project 2yr	2458.95	25.12	33.92		33.97	0.001108	2.68	2105.56	1442.26	0.17
Robla Creek	Magpie to NEMDC	0.917 ARN-G	Max WS	Pre-Project 10yr	5102.45	25.12	36.45		36.47	0.000238	1.50	6026.77	1591.60	0.08
Robla Creek	Magpie to NEMDC	0.917 ARN-G	Max WS	Pre-Project 25yr	7114.78	25.12	38.23		38.24	0.000134	1.26	8862.91	1596.81	0.06
Robla Creek	Magpie to NEMDC	0.917 ARN-G	Max WS	Pre-Project_50yr	8601.75	25.12	39.55		39.56	0.000098	1.15	10977.86	1600.08	0.06
Robla Creek	Magpie to NEMDC	0.917 ARN-G	Max WS	Pre-Project_100yr	10171.88	25.12	41.00		41.01	0.000073	1.06	13293.13	1603.47	0.05
Robla Creek	Magpie to NEMDC	0.917 ARN-G	Max WS	Pre-Project 200yr	11736.88	25.12	42.43		42.44	0.000057	1.00	15594.69	1606.83	0.04
Robla Creek	Magpie to NEMDC	0.917 ARN-G	Max WS	Pre-Project 500yr	13797.00	25.12	44.24		44.25	0.000045	0.96	18497.10	1611.23	0.04
Robla Creek	Magpie to NEMDC	0.917 ARN-G	Max WS	Post Project 500yr	14153.20	25.12	44.24		44.25	0.000048	0.98	18508.60	1611.25	0.04
Robla Creek	Magpie to NEMDC	0.917 ARN-G	Max WS	Post Project 200 yr	11978.33	25.12	42.44		42.45	0.000060	1.02	15606.15	1606.85	0.04
Robla Creek	Magpie to NEMDC	0.917 ARN-G	Max WS	Post Project 100yr	10360.90	25.12	41.01		41.02	0.000075	1.08	13304.94	1603.48	0.05
Robla Creek	Magpie to NEMDC	0.917 ARN-G	Max WS	Post Project 50yr	8704.06	25.12	39.56		39.57	0.000100	1.16	10987.82	1600.09	0.06
Robla Creek	Magpie to NEMDC	0.917 ARN-G	Max WS	Post Project 25yr	7182.16	25.12	38.24		38.25	0.000136	1.27	8869.67	1596.82	0.06
Robla Creek	Magpie to NEMDC	0.917 ARN-G	Max WS	Post Project 10yr	5020.13	25.12	36.43		36.44	0.000236	1.49	5984.94	1591.53	0.08
Robla Creek	Magpie to NEMDC	0.917 ARN-G	Max WS	Post Project 2yr	2319.62	25.12	33.84		33.90	0.001120	2.68	2000.53	1438.15	0.17
Robla Creek	Magpie to NEMDC	0.801	Max WS	Pre-Project 2yr	2452.71	24.78	33.33		33.37	0.000945	2.30	2219.08	1389.69	0.15
Robla Creek	Magpie to NEMDC	0.801	Max WS	Pre-Project 10yr	5068.33	24.78	36.34		36.35	0.000158	1.20	6829.63	1585.73	0.07
Robla Creek	Magpie to NEMDC	0.801	Max WS	Pre-Project 25yr	7086.96	24.78	38.17		38.18	0.000098	1.05	9727.86	1590.52	0.05
Robla Creek	Magpie to NEMDC	0.801	Max WS	Pre-Project_50yr	8563.80	24.78	39.51		39.51	0.000075	0.99	11861.38	1595.73	0.05
Robla Creek	Magpie to NEMDC	0.801	Max WS	Pre-Project_100yr	10144.26	24.78	40.96		40.97	0.000059	0.94	14196.52	1611.20	0.04
Robla Creek	Magpie to NEMDC	0.801	Max WS	Pre-Project 200yr	11737.41	24.78	42.40		42.41	0.000048	0.91	16533.84	1625.94	0.04
Robla Creek	Magpie to NEMDC	0.801	Max WS	Pre-Project 500yr	13796.66	24.78	44.21		44.22	0.000039	0.87	19480.54	1630.35	0.04
Robla Creek	Magpie to NEMDC	0.801	Max WS	Post Project 500yr	14152.40	24.78	44.22		44.23	0.000041	0.90	19490.32	1630.37	0.04
Robla Creek	Magpie to NEMDC	0.801	Max WS	Post Project 200 yr	11979.34	24.78	42.41		42.42	0.000050	0.92	16543.61	1625.96	0.04
Robla Creek	Magpie to NEMDC	0.801	Max WS	Post Project 100yr	10340.95	24.78	40.97		40.98	0.000061	0.96	14206.30	1611.28	0.04
Robla Creek	Magpie to NEMDC	0.801	Max WS	Post Project 50yr	8677.37	24.78	39.51		39.52	0.000077	1.00	11869.67	1595.78	0.05
Robla Creek	Magpie to NEMDC	0.801	Max WS	Post Project 25yr	7134.81	24.78	38.17		38.18	0.000099	1.06	9733.06	1590.53	0.05
Robla Creek	Magpie to NEMDC	0.801	Max WS	Post Project 10yr	4980.48	24.78	36.32		36.33	0.000155	1.18	6790.09	1585.67	0.07
Robla Creek	Magpie to NEMDC	0.801	Max WS	Post Project 2yr	2311.43	24.78	33.26		33.30	0.000944	2.29	2121.57	1356.00	0.15
Robla Creek	Magpie to NEMDC	0.704	Max WS	Pre-Project 2yr	2544.68	23.88	32.82		32.85	0.001051	2.12	2041.63	1081.15	0.16
Robla Creek	Magpie to NEMDC	0.704	Max WS	Pre-Project 10yr	4928.67	23.88	36.27		36.28	0.000123	1.00	7197.71	1564.24	0.06
Robla Creek	Magpie to NEMDC	0.704	Max WS	Pre-Project 25yr	6795.06	23.88	38.12		38.13	0.000078	0.90	10100.62	1571.48	0.05
Robla Creek	Magpie to NEMDC	0.704	Max WS	Pre-Project_50yr	8303.57	23.88	39.47		39.48	0.000063	0.87	12223.63	1575.82	0.04
Robla Creek	Magpie to NEMDC	0.704	Max WS	Pre-Project_100yr	10023.30	23.88	40.94		40.94	0.000052	0.86	14532.45	1580.20	0.04
Robla Creek	Magpie to NEMDC	0.704	Max WS	Pre-Project 200yr	11742.29	23.88	42.38		42.39	0.000044	0.84	16819.25	1584.16	0.04
Robla Creek	Magpie to NEMDC	0.704	Max WS	Pre-Project 500yr	13847.77	23.88	44.20		44.20	0.000037	0.83	19696.87	1588.65	0.04
Robla Creek	Magpie to NEMDC	0.704	Max WS	Post Project 500yr	14189.48	23.88	44.20		44.21	0.000038	0.85	19704.96	1588.67	0.04
Robla Creek	Magpie to NEMDC	0.704	Max WS	Post Project 200 yr	11979.37	23.88	42.39		42.39	0.000046	0.86	16827.38	1584.17	0.04
Robla Creek	Magpie to NEMDC	0.704	Max WS	Post Project 100yr	10185.25	23.88	40.94		40.95	0.000054	0.87	14540.36	1580.22	0.04
Robla Creek	Magpie to NEMDC	0.704	Max WS	Post Project 50yr	8389.59	23.88	39.48		39.48	0.000064	0.88	12230.64	1575.84	0.04
Robla Creek	Magpie to NEMDC	0.704	Max WS	Post Project 25yr	6830.70	23.88	38.13		38.13	0.000079	0.91	10105.24	1571.49	0.05
Robla Creek	Magpie to NEMDC	0.704	Max WS	Post Project 10yr	4850.96	23.88	36.25		36.26	0.000122	0.99	7160.25	1564.17	0.06
Robla Creek	Magpie to NEMDC	0.704	Max WS	Post Project 2yr	2389.06	23.88	32.76		32.80	0.001005	2.05	1980.85	1070.11	0.15
Robla Creek	Magpie to NEMDC	0.604	Max WS	Pre-Project 2yr	2438.40	24.73	32.32		32.34	0.000873	1.41	2372.77	1467.75	0.12
Robla Creek	Magpie to NEMDC	0.604	Max WS	Pre-Project 10yr	4918.58	24.73	36.22		36.23	0.000080	0.67	8342.98	1545.90	0.04
Robla Creek	Magpie to NEMDC	0.604	Max WS	Pre-Project 25yr	6791.36	24.73	38.09		38.10	0.000057	0.65	11236.49	1550.79	0.04
Robla Creek	Magpie to NEMDC	0.604	Max WS	Pre-Project_50yr	8303.86	24.73	39.45		39.45	0.000049	0.65	13340.42	1554.33	0.03
Robla Creek	Magpie to NEMDC	0.604	Max WS	Pre-Project_100yr	10025.58	24.73	40.91		40.92	0.000042	0.66	15624.41	1558.40	0.03
Robla Creek	Magpie to NEMDC	0.604	Max WS	Pre-Project 200yr	11742.00	24.73	42.36		42.37	0.000037	0.66	17884.51	1562.55	0.03
Robla Creek	Magpie to NEMDC	0.604	Max WS	Pre-Project 500yr	13846.56	24.73	44.18		44.19	0.000032	0.66	20728.66	1567.63	0.03
Robla Creek	Magpie to NEMDC	0.604	Max WS	Post Project 500yr	14186.98	24.73	44.18		44.19	0.000033	0.68	20735.37	1567.64	0.03
Robla Creek	Magpie to NEMDC	0.604	Max WS	Post Project 200 yr	11979.52	24.73	42.37		42.37	0.000038	0.67	17891.30	1562.56	0.03
Robla Creek	Magpie to NEMDC	0.604	Max WS	Post Project 100yr	10184.92	24.73	40.92		40.92	0.000043	0.67	15631.14	1558.41	0.03
Robla Creek	Magpie to NEMDC	0.604	Max WS	Post Project 50yr	8387.31	24.73	39.45		39.46	0.000050	0.66	13346.56	1554.34	0.03
Robla Creek	Magpie to NEMDC	0.604	Max WS	Post Project 25yr	6827.94	24.73	38.09		38.10	0.000058	0.65	11240.60	1550.80	0.04

Robla Creek	Magpie to NEMDC	0.604	Max WS	Post Project 10yr	4844.48	24.73	36.20		36.20	0.000079	0.66	8307.12	1545.84	0.04
Robla Creek	Magpie to NEMDC	0.604	Max WS	Post Project 2yr	2326.87	24.73	32.29		32.31	0.000833	1.37	2329.75	1465.63	0.12
Robla Creek	Magpie to NEMDC	0.501	Max WS	Pre-Project 2yr	2309.67	23.94	31.98		31.99	0.000467	1.14	2918.73	1490.95	0.09
Robla Creek	Magpie to NEMDC	0.501	Max WS	Pre-Project 10yr	4884.79	23.94	36.19		36.19	0.000053	0.58	9386.34	1547.34	0.03
Robla Creek	Magpie to NEMDC	0.501	Max WS	Pre-Project 25yr	6698.22	23.94	38.07		38.07	0.000041	0.58	12298.12	1553.83	0.03
Robla Creek	Magpie to NEMDC	0.501	Max WS	Pre-Project_50yr	8303.38	23.94	39.42		39.43	0.000037	0.60	14411.50	1558.40	0.03
Robla Creek	Magpie to NEMDC	0.501	Max WS	Pre-Project_100yr	10036.00	23.94	40.89		40.90	0.000033	0.61	16706.26	1563.22	0.03
Robla Creek	Magpie to NEMDC	0.501	Max WS	Pre-Project 200yr	11806.98	23.94	42.34		42.35	0.000030	0.62	18976.62	1567.97	0.03
Robla Creek	Magpie to NEMDC	0.501	Max WS	Pre-Project 500yr	14066.29	23.94	44.16		44.17	0.000027	0.64	21834.19	1573.45	0.03
Robla Creek	Magpie to NEMDC	0.501	Max WS	Post Project 500yr	14371.74	23.94	44.17		44.17	0.000028	0.65	21839.94	1573.46	0.03
Robla Creek	Magpie to NEMDC	0.501	Max WS	Post Project 200 yr	12028.87	23.94	42.35		42.35	0.000032	0.64	18982.50	1567.98	0.03
Robla Creek	Magpie to NEMDC	0.501	Max WS	Post Project 100yr	10191.12	23.94	40.90		40.90	0.000034	0.62	16712.17	1563.23	0.03
Robla Creek	Magpie to NEMDC	0.501	Max WS	Post Project 50yr	8384.50	23.94	39.43		39.43	0.000038	0.61	14417.07	1558.41	0.03
Robla Creek	Magpie to NEMDC	0.501	Max WS	Post Project 25yr	6727.57	23.94	38.07		38.07	0.000041	0.58	12301.97	1553.84	0.03
Robla Creek	Magpie to NEMDC	0.501	Max WS	Post Project 10yr	4814.62	23.94	36.16		36.17	0.000052	0.58	9351.26	1547.26	0.03
Robla Creek	Magpie to NEMDC	0.501	Max WS	Post Project 2yr	2245.95	23.94	31.96		31.97	0.000453	1.12	2892.58	1490.26	0.09
Robla Creek	Magpie to NEMDC	0.402	Max WS	Pre-Project 2yr	2288.39	23.09	31.82		31.82	0.000176	0.66	4243.65	1664.96	0.06
Robla Creek	Magpie to NEMDC	0.402	Max WS	Pre-Project 10yr	4882.88	23.09	36.17		36.17	0.000030	0.43	11534.47	1683.35	0.03
Robla Creek	Magpie to NEMDC	0.402	Max WS	Pre-Project 25yr	6696.32	23.09	38.05		38.05	0.000025	0.45	14708.83	1689.72	0.02
Robla Creek	Magpie to NEMDC	0.402	Max WS	Pre-Project_50yr	8303.88	23.09	39.41		39.41	0.000024	0.48	17009.07	1694.53	0.02
Robla Creek	Magpie to NEMDC	0.402	Max WS	Pre-Project_100yr	10037.93	23.09	40.88		40.89	0.000022	0.50	19506.84	1699.52	0.02
Robla Creek	Magpie to NEMDC	0.402	Max WS	Pre-Project 200yr	11806.67	23.09	42.33		42.34	0.000021	0.51	21976.04	1703.35	0.02
Robla Creek	Magpie to NEMDC	0.402	Max WS	Pre-Project 500yr	13971.28	23.09	44.15		44.16	0.000019	0.53	25081.82	1708.15	0.02
Robla Creek	Magpie to NEMDC	0.402	Max WS	Post Project 500yr	14283.82	23.09	44.16		44.16	0.000020	0.54	25087.37	1708.15	0.02
Robla Creek	Magpie to NEMDC	0.402	Max WS	Post Project 200 yr	12028.71	23.09	42.34		42.34	0.000022	0.52	21981.70	1703.35	0.02
Robla Creek	Magpie to NEMDC	0.402	Max WS	Post Project 100yr	10192.79	23.09	40.88		40.89	0.000023	0.50	19512.65	1699.53	0.02
Robla Creek	Magpie to NEMDC	0.402	Max WS	Post Project 50yr	8384.25	23.09	39.41		39.42	0.000025	0.48	17014.73	1694.54	0.02
Robla Creek	Magpie to NEMDC	0.402	Max WS	Post Project 25yr	6726.10	23.09	38.05		38.06	0.000026	0.45	14712.79	1689.73	0.02
Robla Creek	Magpie to NEMDC	0.402	Max WS	Post Project 10yr	4813.36	23.09	36.15		36.15	0.000030	0.43	11496.86	1683.28	0.03
Robla Creek	Magpie to NEMDC	0.402	Max WS	Post Project 2yr	2236.06	23.09	31.81		31.81	0.000171	0.65	4221.59	1664.81	0.05
Robla Creek	Magpie to NEMDC	0.317	Max WS	Pre-Project 2yr	2410.91	22.92	31.77		31.77	0.000066	0.56	5852.82	1777.76	0.04
Robla Creek	Magpie to NEMDC	0.317	Max WS	Pre-Project 10yr	5003.87	22.92	36.16		36.16	0.000019	0.42	13761.46	1808.78	0.02
Robla Creek	Magpie to NEMDC	0.317	Max WS	Pre-Project 25yr	6696.16	22.92	38.04		38.04	0.000017	0.43	17174.36	1814.27	0.02
Robla Creek	Magpie to NEMDC	0.317	Max WS	Pre-Project_50yr	8345.29	22.92	39.40		39.40	0.000017	0.46	19643.98	1818.38	0.02
Robla Creek	Magpie to NEMDC	0.317	Max WS	Pre-Project_100yr	10170.07	22.92	40.87		40.88	0.000016	0.48	22324.24	1822.93	0.02
Robla Creek	Magpie to NEMDC	0.317	Max WS	Pre-Project 200yr	12078.34	22.92	42.33		42.33	0.000016	0.50	24973.35	1827.20	0.02
Robla Creek	Magpie to NEMDC	0.317	Max WS	Pre-Project 500yr	14469.29	22.92	44.15		44.15	0.000015	0.52	28305.73	1832.18	0.02
Robla Creek	Magpie to NEMDC	0.317	Max WS	Post Project 500yr	14745.59	22.92	44.15		44.15	0.000016	0.53	28311.28	1832.18	0.02
Robla Creek	Magpie to NEMDC	0.317	Max WS	Post Project 200 yr	12273.95	22.92	42.33		42.33	0.000016	0.51	24979.06	1827.21	0.02
Robla Creek	Magpie to NEMDC	0.317	Max WS	Post Project 100yr	10307.47	22.92	40.88		40.88	0.000017	0.49	22330.19	1822.94	0.02
Robla Creek	Magpie to NEMDC	0.317	Max WS	Post Project 50yr	8418.22	22.92	39.40		39.41	0.000017	0.46	19649.83	1818.39	0.02

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Robla Creek	Magpie to NEMDC	0.317	Max WS	Post Project 25yr	6725.49	22.92	38.04		38.05	0.000017	0.43	17178.49	1814.28	0.02
Robla Creek	Magpie to NEMDC	0.317	Max WS	Post Project 10yr	4936.28	22.92	36.14		36.14	0.000019	0.41	13721.36	1808.72	0.02
Robla Creek	Magpie to NEMDC	0.317	Max WS	Post Project 2yr	2356.20	22.92	31.76		31.76	0.000063	0.55	5831.98	1775.79	0.04
Robla Creek	Magpie to NEMDC	0.244	Max WS	Pre-Project 2yr	2409.84	22.21	31.75		31.76	0.000031	0.42	7373.11	1856.37	0.03
Robla Creek	Magpie to NEMDC	0.244	Max WS	Pre-Project 10yr	5003.04	22.21	36.15		36.15	0.000013	0.36	15562.20	1866.75	0.02
Robla Creek	Magpie to NEMDC	0.244	Max WS	Pre-Project 25yr	6696.58	22.21	38.04		38.04	0.000012	0.38	19084.94	1871.72	0.02
Robla Creek	Magpie to NEMDC	0.244	Max WS	Pre-Project_50yr	8344.84	22.21	39.40		39.40	0.000012	0.41	21632.33	1875.31	0.02
Robla Creek	Magpie to NEMDC	0.244	Max WS	Pre-Project_100yr	10170.58	22.21	40.87		40.87	0.000012	0.44	24396.22	1879.46	0.02
Robla Creek	Magpie to NEMDC	0.244	Max WS	Pre-Project 200yr	12078.34	22.21	42.32		42.32	0.000012	0.46	27127.57	1883.92	0.02
Robla Creek	Magpie to NEMDC	0.244	Max WS	Pre-Project 500yr	14472.13	22.21	44.14		44.15	0.000012	0.49	30565.86	1891.12	0.02
Robla Creek	Magpie to NEMDC	0.244	Max WS	Post Project 500yr	14748.90	22.21	44.15		44.15	0.000013	0.50	30571.30	1891.13	0.02
Robla Creek	Magpie to NEMDC	0.244	Max WS	Post Project 200 yr	12273.87	22.21	42.32		42.33	0.000013	0.47	27133.22	1883.93	0.02
Robla Creek	Magpie to NEMDC	0.244	Max WS	Post Project 100yr	10308.17	22.21	40.87		40.88	0.000013	0.45	24402.16	1879.47	0.02
Robla Creek	Magpie to NEMDC	0.244	Max WS	Post Project 50yr	8418.58	22.21	39.40		39.40	0.000013	0.42	21638.24	1875.32	0.02
Robla Creek	Magpie to NEMDC	0.244	Max WS	Post Project 25yr	6724.93	22.21	38.04		38.04	0.000012	0.39	19089.16	1871.73	0.02
Robla Creek	Magpie to NEMDC	0.244	Max WS	Post Project 10yr	4935.78	22.21	36.13		36.13	0.000013	0.36	15520.99	1866.69	0.02
Robla Creek	Magpie to NEMDC	0.244	Max WS	Post Project 2yr	2355.38	22.21	31.74		31.75	0.000030	0.41	7352.36	1856.34	0.03
Robla Creek	Magpie to NEMDC	0.193*	Max WS	Pre-Project 2yr	2370.25	21.78	31.74		31.75	0.000033	0.43	6389.35	1667.48	0.03
Robla Creek	Magpie to NEMDC	0.193*	Max WS	Pre-Project 10yr	5069.38	21.78	36.15		36.15	0.000025	0.50	12292.80	1678.90	0.02
Robla Creek	Magpie to NEMDC	0.193*	Max WS	Pre-Project 25yr	6686.78	21.78	38.03		38.03	0.000021	0.50	15462.66	1683.59	0.02
Robla Creek	Magpie to NEMDC	0.193*	Max WS	Pre-Project_50yr	8373.77	21.78	39.39		39.39	0.000021	0.53	17753.83	1687.14	0.02
Robla Creek	Magpie to NEMDC	0.193*	Max WS	Pre-Project_100yr	10299.39	21.78	40.86		40.87	0.000021	0.56	20240.24	1691.01	0.02
Robla Creek	Magpie to NEMDC	0.193*	Max WS	Pre-Project 200yr	12364.53	21.78	42.31		42.32	0.000020	0.59	22698.12	1696.20	0.02

Robla Creek	Magpie to NEMDC	0.193*	Max WS	Pre-Project 500yr	15028.79	21.78	44.14		44.14	0.000020	0.62	25794.83	1704.65	0.02
Robla Creek	Magpie to NEMDC	0.193*	Max WS	Post Project 500yr	15255.91	21.78	44.14		44.14	0.000021	0.63	25799.47	1704.67	0.02
Robla Creek	Magpie to NEMDC	0.193*	Max WS	Post Project 200 yr	12527.21	21.78	42.32		42.32	0.000021	0.60	22702.96	1696.21	0.02
Robla Creek	Magpie to NEMDC	0.193*	Max WS	Post Project 100yr	10415.49	21.78	40.87		40.87	0.000021	0.57	20245.44	1691.02	0.02
Robla Creek	Magpie to NEMDC	0.193*	Max WS	Post Project 50yr	8440.97	21.78	39.39		39.40	0.000021	0.54	17759.01	1687.15	0.02
Robla Creek	Magpie to NEMDC	0.193*	Max WS	Post Project 25yr	6714.25	21.78	38.03		38.04	0.000021	0.50	15466.39	1683.60	0.02
Robla Creek	Magpie to NEMDC	0.193*	Max WS	Post Project 10yr	5007.26	21.78	36.12		36.13	0.000025	0.50	12255.90	1678.85	0.02
Robla Creek	Magpie to NEMDC	0.193*	Max WS	Post Project 2yr	2326.88	21.78	31.73		31.74	0.000032	0.42	6374.89	1667.44	0.03
Robla Creek	Magpie to NEMDC	0.142	Max WS	Pre-Project 2yr	2369.96	21.36	31.73		31.73	0.000069	0.64	4550.87	1474.12	0.04
Robla Creek	Magpie to NEMDC	0.142	Max WS	Pre-Project 10yr	5069.11	21.36	36.13		36.14	0.000060	0.79	8792.80	1491.37	0.04
Robla Creek	Magpie to NEMDC	0.142	Max WS	Pre-Project 25yr	6686.43	21.36	38.02		38.03	0.000044	0.74	11616.32	1498.27	0.03
Robla Creek	Magpie to NEMDC	0.142	Max WS	Pre-Project_50yr	8373.38	21.36	39.38		39.39	0.000041	0.76	13656.39	1502.40	0.03
Robla Creek	Magpie to NEMDC	0.142	Max WS	Pre-Project_100yr	10299.88	21.36	40.85		40.86	0.000039	0.78	15871.57	1506.60	0.03
Robla Creek	Magpie to NEMDC	0.142	Max WS	Pre-Project 200yr	12364.06	21.36	42.30		42.31	0.000037	0.80	18061.21	1510.57	0.03
Robla Creek	Magpie to NEMDC	0.142	Max WS	Pre-Project 500yr	15030.02	21.36	44.13		44.13	0.000034	0.82	20816.96	1514.87	0.03
Robla Creek	Magpie to NEMDC	0.142	Max WS	Post Project 500yr	15255.27	21.36	44.13		44.14	0.000035	0.83	20820.66	1514.88	0.03
Robla Creek	Magpie to NEMDC	0.142	Max WS	Post Project 200 yr	12526.96	21.36	42.31		42.31	0.000037	0.81	18065.13	1510.58	0.03
Robla Creek	Magpie to NEMDC	0.142	Max WS	Post Project 100yr	10416.11	21.36	40.86		40.86	0.000039	0.79	15875.88	1506.61	0.03
Robla Creek	Magpie to NEMDC	0.142	Max WS	Post Project 50yr	8440.42	21.36	39.38		39.39	0.000042	0.77	13660.77	1502.41	0.03
Robla Creek	Magpie to NEMDC	0.142	Max WS	Post Project 25yr	6713.82	21.36	38.02		38.03	0.000044	0.75	11619.51	1498.28	0.03
Robla Creek	Magpie to NEMDC	0.142	Max WS	Post Project 10yr	5006.99	21.36	36.11		36.12	0.000060	0.79	8760.31	1491.27	0.04
Robla Creek	Magpie to NEMDC	0.142	Max WS	Post Project 2yr	2326.94	21.36	31.72		31.72	0.000067	0.63	4541.12	1474.09	0.04
Robla Creek	Magpie to NEMDC	0.067	Max WS	Pre-Project 2yr	2366.34	21.40	31.59		31.65	0.000714	2.25	1325.93	1295.46	0.14
Robla Creek	Magpie to NEMDC	0.067	Max WS	Pre-Project 10yr	5066.53	21.40	35.93		36.11	0.001060	3.69	2446.21	1305.72	0.19
Robla Creek	Magpie to NEMDC	0.067	Max WS	Pre-Project 25yr	6683.20	21.40	37.92		37.99	0.000458	2.69	5051.52	1309.98	0.13
Robla Creek	Magpie to NEMDC	0.067	Max WS	Pre-Project_50yr	8372.10	21.40	39.31		39.35	0.000324	2.41	6869.83	1313.21	0.11
Robla Creek	Magpie to NEMDC	0.067	Max WS	Pre-Project_100yr	10299.84	21.40	40.80		40.83	0.000241	2.21	8827.07	1316.04	0.09
Robla Creek	Magpie to NEMDC	0.067	Max WS	Pre-Project 200yr	12361.42	21.40	42.26		42.29	0.000193	2.09	10751.14	1318.59	0.09
Robla Creek	Magpie to NEMDC	0.067	Max WS	Pre-Project 500yr	15031.77	21.40	44.09		44.11	0.000154	1.98	13166.82	1322.82	0.08
Robla Creek	Magpie to NEMDC	0.067	Max WS	Post Project 500yr	15254.38	21.40	44.09		44.12	0.000158	2.01	13168.50	1322.82	0.08
Robla Creek	Magpie to NEMDC	0.067	Max WS	Post Project 200 yr	12520.82	21.40	42.26		42.29	0.000198	2.11	10752.92	1318.60	0.09
Robla Creek	Magpie to NEMDC	0.067	Max WS	Post Project 100yr	10416.05	21.40	40.80		40.83	0.000246	2.23	8829.22	1316.05	0.10
Robla Creek	Magpie to NEMDC	0.067	Max WS	Post Project 50yr	8439.14	21.40	39.31		39.35	0.000329	2.42	6872.19	1313.21	0.11
Robla Creek	Magpie to NEMDC	0.067	Max WS	Post Project 25yr	6711.30	21.40	37.92		37.99	0.000461	2.70	5053.34	1309.99	0.13
Robla Creek	Magpie to NEMDC	0.067	Max WS	Post Project 10yr	5004.45	21.40	35.92		36.09	0.001043	3.66	2431.65	1305.70	0.19
Robla Creek	Magpie to NEMDC	0.067	Max WS	Post Project 2yr	2326.95	21.40	31.58		31.64	0.000693	2.22	1324.43	1295.45	0.14
Robla Creek	Magpie to NEMDC	0.056	Max WS	Pre-Project 2yr	2365.90	21.40	31.54	24.75	31.61	0.000723	2.06	1190.47	1255.96	0.12
Robla Creek	Magpie to NEMDC	0.056	Max WS	Pre-Project 10yr	5066.30	21.40	35.89	26.59	36.00	0.000734	2.74	1893.94	1287.73	0.13
Robla Creek	Magpie to NEMDC	0.056	Max WS	Pre-Project 25yr	6681.85	21.40	37.89	27.48	37.96	0.000480	2.44	4471.17	1296.84	0.11
Robla Creek	Magpie to NEMDC	0.056	Max WS	Pre-Project_50yr	8369.71	21.40	39.29	28.30	39.33	0.000333	2.16	6285.27	1301.89	0.09
Robla Creek	Magpie to NEMDC	0.056	Max WS	Pre-Project_100yr	10299.76	21.40	40.78	29.23	40.82	0.000240	1.94	8234.73	1306.98	0.08
Robla Creek	Magpie to NEMDC	0.056	Max WS	Pre-Project 200yr	12353.92	21.40	42.25	29.94	42.27	0.000187	1.81	10151.30	1311.86	0.07
Robla Creek	Magpie to NEMDC	0.056	Max WS	Pre-Project 500yr	15032.03	21.40	44.08	30.78	44.10	0.000144	1.69	12559.39	1317.10	0.06
Robla Creek	Magpie to NEMDC	0.056	Max WS	Post Project 500yr	15254.17	21.40	44.08	30.85	44.11	0.000148	1.71	12560.76	1317.11	0.07
Robla Creek	Magpie to NEMDC	0.056	Max WS	Post Project 200 yr	12511.63	21.40	42.25	30.00	42.28	0.000191	1.83	10152.72	1311.86	0.07
Robla Creek	Magpie to NEMDC	0.056	Max WS	Post Project 100yr	10415.67	21.40	40.78	29.27	40.82	0.000245	1.96	8236.50	1306.99	0.08
Robla Creek	Magpie to NEMDC	0.056	Max WS	Post Project 50yr	8436.92	21.40	39.29	28.32	39.34	0.000338	2.17	6287.22	1301.90	0.10
Robla Creek	Magpie to NEMDC	0.056	Max WS	Post Project 25yr	6708.29	21.40	37.89	27.49	37.96	0.000484	2.45	4472.70	1296.85	0.11
Robla Creek	Magpie to NEMDC	0.056	Max WS	Post Project 10yr	5001.88	21.40	35.87	26.55	35.98	0.000718	2.71	1891.89	1287.66	0.13
Robla Creek	Magpie to NEMDC	0.056	Max WS	Post Project 2yr	2326.92	21.40	31.54	24.72	31.60	0.000700	2.03	1189.72	1255.94	0.12
Robla Creek	Magpie to NEMDC	0.051 RR			Bridge									
Robla Creek	Magpie to NEMDC	0.047	Max WS	Pre-Project 2yr	2365.90	21.34	31.39		31.48	0.000724	2.36	1069.82	1270.54	0.15
Robla Creek	Magpie to NEMDC	0.047	Max WS	Pre-Project 10yr	4969.40	21.34	35.31		35.45	0.000759	3.14	1708.35	1296.16	0.16
Robla Creek	Magpie to NEMDC	0.047	Max WS	Pre-Project 25yr	6669.95	21.34	37.72		37.83	0.000517	2.93	4178.03	1304.31	0.14
Robla Creek	Magpie to NEMDC	0.047	Max WS	Pre-Project_50yr	8333.52	21.34	39.20		39.26	0.000361	2.61	6104.70	1309.03	0.12
Robla Creek	Magpie to NEMDC	0.047	Max WS	Pre-Project_100yr	10299.76	21.34	40.73		40.77	0.000269	2.40	8108.09	1314.43	0.10
Robla Creek	Magpie to NEMDC	0.047	Max WS	Pre-Project 200yr	12300.88	21.34	42.20		42.24	0.000212	2.25	10053.47	1319.76	0.09
Robla Creek	Magpie to NEMDC	0.047	Max WS	Pre-Project 500yr	15032.03	21.34	44.05		44.08	0.000168	2.13	12490.76	1324.93	0.08
Robla Creek	Magpie to NEMDC	0.047	Max WS	Post Project 500yr	15254.17	21.34	44.05		44.08	0.000173	2.16	12490.85	1324.93	0.08
Robla Creek	Magpie to NEMDC	0.047	Max WS	Post Project 200 yr	12458.89	21.34	42.20		42.24	0.000217	2.27	10053.55	1319.76	0.09
Robla Creek	Magpie to NEMDC	0.047	Max WS	Post Project 100yr	10415.67	21.34	40.73		40.78	0.000275	2.42	8108.17	1314.43	0.10
Robla Creek	Magpie to NEMDC	0.047	Max WS	Post Project 50yr	8394.56	21.34	39.20		39.27	0.000366	2.63	6104.74	1309.03	0.12
Robla Creek	Magpie to NEMDC	0.047	Max WS	Post Project 25yr	6690.25	21.34	37.72		37.83	0.000520	2.94	4178.02	1304.31	0.14
Robla Creek	Magpie to NEMDC	0.047	Max WS	Post Project 10yr	4911.31	21.34	35.31		35.45	0.000741	3.11	1708.46	1296.16	0.16
Robla Creek	Magpie to NEMDC	0.047	Max WS	Post Project 2yr	2326.92	21.34	31.40		31.48	0.000700	2.32	1069.89	1270.54	0.14
Robla Creek	Magpie to NEMDC	0.046	Max WS	Pre-Project 2yr	2365.83	21.24	31.41	24.88	31.46	0.000486	1.94	1323.54	1298.64	0.12
Robla Creek	Magpie to NEMDC	0.046	Max WS	Pre-Project 10yr	4969.34	21.24	35.34	26.62	35.44	0.000513	2.60	2074.92	1310.74	0.13

Robla Creek	Magpie to NEMDC	0.046	Max WS	Pre-Project 25yr	6669.89	21.24	37.73	27.65	37.80	0.000398	2.58	4581.81	1317.49	0.12
Robla Creek	Magpie to NEMDC	0.046	Max WS	Pre-Project_50yr	8333.08	21.24	39.20	28.38	39.25	0.000291	2.35	6523.32	1321.70	0.10
Robla Creek	Magpie to NEMDC	0.046	Max WS	Pre-Project_100yr	10299.51	21.24	40.72	29.09	40.77	0.000225	2.20	8545.26	1327.00	0.09
Robla Creek	Magpie to NEMDC	0.046	Max WS	Pre-Project 200yr	12300.86	21.24	42.20	29.70	42.24	0.000182	2.09	10509.26	1332.01	0.08
Robla Creek	Magpie to NEMDC	0.046	Max WS	Pre-Project 500yr	15031.89	21.24	44.04	30.48	44.08	0.000148	2.00	12970.32	1338.00	0.08
Robla Creek	Magpie to NEMDC	0.046	Max WS	Post Project 500yr	15254.02	21.24	44.04	30.54	44.08	0.000152	2.03	12970.32	1338.00	0.08
Robla Creek	Magpie to NEMDC	0.046	Max WS	Post Project 200 yr	12458.87	21.24	42.20	29.73	42.24	0.000187	2.11	10509.26	1332.01	0.09
Robla Creek	Magpie to NEMDC	0.046	Max WS	Post Project 100yr	10415.41	21.24	40.72	29.13	40.77	0.000230	2.22	8545.26	1327.00	0.09
Robla Creek	Magpie to NEMDC	0.046	Max WS	Post Project 50yr	8394.53	21.24	39.20	28.40	39.25	0.000296	2.37	6523.32	1321.70	0.10

River	Reach	River Sta	Profile	Pla n	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Robla Creek	Magpie to NEMDC	0.046	Max WS	Post Project 25yr	6690.18	21.24	37.73	27.66	37.80	0.000401	2.59	4581.81	1317.49	0.12
Robla Creek	Magpie to NEMDC	0.046	Max WS	Post Project 10yr	4911.25	21.24	35.34	26.59	35.43	0.000501	2.57	2074.92	1310.74	0.13
Robla Creek	Magpie to NEMDC	0.046	Max WS	Post Project 2yr	2326.85	21.24	31.41	24.85	31.46	0.000470	1.91	1323.54	1298.64	0.12
Magpie Creek	Magpie Creek	1.22	Max WS	Post Project 500yr	366.64	41.19	50.56		50.57	0.000033	1.01	418.56	82.84	0.07
Magpie Creek	Magpie Creek	1.22	Max WS	Post Project 200 yr	338.07	41.19	50.14		50.16	0.000035	1.00	385.03	78.12	0.07
Magpie Creek	Magpie Creek	1.22	Max WS	Post Project 100yr	394.92	41.19	49.71		49.74	0.000060	1.26	351.66	77.24	0.09
Magpie Creek	Magpie Creek	1.22	Max WS	Post Project 50yr	431.98	41.19	49.28		49.31	0.000094	1.49	318.23	76.40	0.11
Magpie Creek	Magpie Creek	1.22	Max WS	Post Project 25yr	448.55	41.19	48.75		48.80	0.000141	1.72	278.63	75.33	0.13
Magpie Creek	Magpie Creek	1.22	Max WS	Post Project 10yr	452.68	41.19	48.05		48.12	0.000223	2.02	230.10	63.59	0.16
Magpie Creek	Magpie Creek	1.22	Max WS	Post Project 2yr	383.31	41.19	47.05		47.12	0.000300	2.15	178.59	42.18	0.18
Magpie Creek	Magpie Creek	1.19	Max WS	Post Project_500yr	349.52	40.98	50.56		50.57	0.000010	0.62	606.75	94.32	0.04
Magpie Creek	Magpie Creek	1.19	Max WS	Post Project_200 yr	337.88	40.98	50.15		50.15	0.000011	0.63	568.27	89.01	0.04
Magpie Creek	Magpie Creek	1.19	Max WS	Post Project_100yr	394.11	40.98	49.72		49.73	0.000019	0.79	530.47	88.10	0.05
Magpie Creek	Magpie Creek	1.19	Max WS	Post Project_50yr	431.77	40.98	49.29		49.30	0.000028	0.92	492.59	87.23	0.06
Magpie Creek	Magpie Creek	1.19	Max WS	Post Project_25yr	449.00	40.98	48.77		48.78	0.000039	1.04	447.64	86.18	0.07
Magpie Creek	Magpie Creek	1.19	Max WS	Post Project_10yr	452.42	40.98	48.07		48.09	0.000059	1.18	388.22	84.50	0.09
Magpie Creek	Magpie Creek	1.19	Max WS	Post Project_2yr	383.76	40.98	47.06		47.09	0.000076	1.22	315.76	64.24	0.10
Magpie Creek	Magpie Creek	1.17	Max WS	Post Project_500yr	328.63	40.81	50.56		50.57	0.000005	0.46	786.36	118.24	0.03
Magpie Creek	Magpie Creek	1.17	Max WS	Post Project_200 yr	337.82	40.81	50.15		50.15	0.000006	0.49	737.90	112.72	0.03
Magpie Creek	Magpie Creek	1.17	Max WS	Post Project_100yr	394.04	40.81	49.72		49.73	0.000010	0.61	690.08	111.76	0.04
Magpie Creek	Magpie Creek	1.17	Max WS	Post Project_50yr	432.97	40.81	49.29		49.30	0.000015	0.71	642.04	110.90	0.05
Magpie Creek	Magpie Creek	1.17	Max WS	Post Project_25yr	449.00	40.81	48.77		48.78	0.000021	0.80	584.90	109.85	0.05
Magpie Creek	Magpie Creek	1.17	Max WS	Post Project_10yr	452.40	40.81	48.08		48.09	0.000031	0.91	509.10	108.37	0.06
Magpie Creek	Magpie Creek	1.17	Max WS	Post Project_2yr	383.92	40.81	47.07		47.08	0.000040	0.92	416.10	79.51	0.07
Magpie Creek	Magpie Creek	1.15	Max WS	Pre-Project_2yr_update	81.30	39.60	48.33		48.33	0.000015	0.64	138.74	68.74	0.04
Magpie Creek	Magpie Creek	1.15	Max WS	Pre-Project_10yr_update	49.67	39.60	49.11		49.12	0.000004	0.35	155.70	68.74	0.02
Magpie Creek	Magpie Creek	1.15	Max WS	Pre-Project_25yr	89.94	39.60	49.52		49.52	0.000008	0.53	232.00	68.74	0.03
Magpie Creek	Magpie Creek	1.15	Max WS	Pre-Project_50yr_update	166.15	39.60	49.74		49.75	0.000026	0.94	241.26	68.74	0.06
Magpie Creek	Magpie Creek	1.15	Max WS	Pre-Project_100yr_update	279.04	39.60	49.91		49.93	0.000056	1.42	309.79	68.74	0.08
Magpie Creek	Magpie Creek	1.15	Max WS	Pre-Project_200yr_update	345.13	39.60	50.06		50.09	0.000080	1.70	320.44	68.74	0.10
Magpie Creek	Magpie Creek	1.15	Max WS	Pre-Project_500yr_update	421.37	39.60	50.22		50.26	0.000109	2.02	331.13	68.74	0.12
Magpie Creek	Magpie Creek	1.15	Max WS	Post Project_500yr	311.14	40.72	50.57		50.57	0.000003	0.34	1010.70	152.80	0.02
Magpie Creek	Magpie Creek	1.15	Max WS	Post Project_200 yr	338.74	40.72	50.15		50.15	0.000004	0.39	947.93	146.63	0.02
Magpie Creek	Magpie Creek	1.15	Max WS	Post Project_100yr	393.90	40.72	49.72		49.73	0.000006	0.49	885.69	145.69	0.03
Magpie Creek	Magpie Creek	1.15	Max WS	Post Project_50yr	432.96	40.72	49.29		49.30	0.000009	0.57	823.07	144.83	0.04
Magpie Creek	Magpie Creek	1.15	Max WS	Post Project_25yr	449.00	40.72	48.77		48.78	0.000013	0.64	748.36	143.79	0.04
Magpie Creek	Magpie Creek	1.15	Max WS	Post Project_10yr	452.36	40.72	48.08		48.09	0.000018	0.72	649.01	142.22	0.05
Magpie Creek	Magpie Creek	1.15	Max WS	Post Project_2yr	383.87	40.72	47.07		47.08	0.000023	0.73	528.88	96.08	0.05
Magpie Creek	Magpie Creek	1.145			Lat Struct									
Magpie Creek	Magpie Creek	1.14	Max WS	Pre-Project_2yr_update	73.75	39.60	48.33	41.12	48.33	0.000006	0.46	251.89	68.88	0.03
Magpie Creek	Magpie Creek	1.14	Max WS	Pre-Project_10yr_update	43.17	39.60	49.12	40.73	49.12	0.000001	0.23	305.96	68.88	0.01
Magpie Creek	Magpie Creek	1.14	Max WS	Pre-Project_25yr	84.73	39.60	49.52	41.24	49.52	0.000004	0.42	333.91	68.88	0.02
Magpie Creek	Magpie Creek	1.14	Max WS	Pre-Project_50yr_update	164.10	39.60	49.74	41.92	49.75	0.000014	0.78	349.16	68.88	0.05
Magpie Creek	Magpie Creek	1.14	Max WS	Pre-Project_100yr_update	279.06	39.60	49.91	42.63	49.93	0.000038	1.29	360.61	68.88	0.07
Magpie Creek	Magpie Creek	1.14	Max WS	Pre-Project_200yr_update	345.22	39.60	50.06	42.99	50.09	0.000054	1.55	371.33	68.88	0.09
Magpie Creek	Magpie Creek	1.14	Max WS	Pre-Project_500yr_update	421.62	39.60	50.22	43.34	50.26	0.000075	1.84	382.15	68.88	0.10
Magpie Creek	Magpie Creek	1.14	Max WS	Post Project_500yr	212.44	40.69	50.57		50.57	0.000001	0.23	1010.36	155.33	0.01
Magpie Creek	Magpie Creek	1.14	Max WS	Post Project_200 yr	186.29	40.69	50.15		50.15	0.000001	0.22	946.75	148.89	0.01
Magpie Creek	Magpie Creek	1.14	Max WS	Post Project_100yr	248.49	40.69	49.73		49.73	0.000003	0.31	883.66	148.03	0.02
Magpie Creek	Magpie Creek	1.14	Max WS	Post Project_50yr	315.23	40.69	49.29		49.30	0.000005	0.41	820.07	147.17	0.03
Magpie Creek	Magpie Creek	1.14	Max WS	Post Project_25yr	421.25	40.69	48.77		48.78	0.000012	0.60	744.30	143.86	0.04
Magpie Creek	Magpie Creek	1.14	Max WS	Post Project_10yr	453.35	40.69	48.08		48.09	0.000019	0.72	645.17	140.75	0.05
Magpie Creek	Magpie Creek	1.14	Max WS	Post Project_2yr	385.32	40.69	47.07		47.08	0.000023	0.73	525.68	95.27	0.06
Magpie Creek	Magpie Creek	1.135			Bridge									

Magpie Creek	Magpie Creek	1.13	Max WS	Pre-Project_2yr_update	73.75	39.54	48.32		48.32	0.000004	0.43	280.27	67.14	0.03
Magpie Creek	Magpie Creek	1.13	Max WS	Pre-Project_10yr_update	43.09	39.54	49.11		49.11	0.000001	0.22	333.44	67.14	0.01
Magpie Creek	Magpie Creek	1.13	Max WS	Pre-Project_25yr	84.83	39.54	49.52		49.52	0.000003	0.40	360.61	67.14	0.02
Magpie Creek	Magpie Creek	1.13	Max WS	Pre-Project_50yr_update	164.10	39.54	49.74		49.74	0.000011	0.74	375.31	67.14	0.04
Magpie Creek	Magpie Creek	1.13	Max WS	Pre-Project_100yr_update	279.06	39.54	49.90		49.92	0.000029	1.22	386.28	67.14	0.07
Magpie Creek	Magpie Creek	1.13	Max WS	Pre-Project_200yr_update	345.22	39.54	50.05		50.08	0.000041	1.48	396.65	67.14	0.08
Magpie Creek	Magpie Creek	1.13	Max WS	Pre-Project_500yr_update	421.62	39.54	50.21		50.24	0.000058	1.76	407.01	67.14	0.10
Magpie Creek	Magpie Creek	1.13	Max WS	Post Project_500yr	210.52	40.50	50.49		50.49	0.000001	0.23	1044.83	155.74	0.01
Magpie Creek	Magpie Creek	1.13	Max WS	Post Project_200 yr	181.66	40.50	50.06		50.06	0.000001	0.21	979.07	149.47	0.01
Magpie Creek	Magpie Creek	1.13	Max WS	Post Project_100yr	246.14	40.50	49.61		49.61	0.000002	0.30	912.65	148.52	0.02
Magpie Creek	Magpie Creek	1.13	Max WS	Post Project_50yr	311.86	40.50	49.16		49.16	0.000004	0.40	845.85	147.61	0.03
Magpie Creek	Magpie Creek	1.13	Max WS	Post Project_25yr	418.49	40.50	48.68		48.69	0.000010	0.58	775.59	146.66	0.04
Magpie Creek	Magpie Creek	1.13	Max WS	Post Project_10yr	448.97	40.50	47.98		47.98	0.000017	0.70	672.70	144.28	0.05
Magpie Creek	Magpie Creek	1.13	Max WS	Post Project_2yr	383.65	40.50	46.98		46.99	0.000021	0.70	552.64	107.11	0.05
Magpie Creek	Magpie Creek	1.12			Lat Struct									
Magpie Creek	Magpie Creek	1.117	Max WS	Pre-Project_2yr_update	32.90	39.51	48.32		48.32	0.000002	0.19	209.09	47.31	0.01
Magpie Creek	Magpie Creek	1.117	Max WS	Pre-Project_10yr_update	7.89	39.51	49.11		49.11	0.000000	0.04	248.16	51.79	0.00
Magpie Creek	Magpie Creek	1.117	Max WS	Pre-Project_25yr	66.54	39.51	49.52		49.52	0.000003	0.31	271.58	64.23	0.02
Magpie Creek	Magpie Creek	1.117	Max WS	Pre-Project_50yr_update	162.77	39.51	49.73		49.74	0.000017	0.72	285.44	64.23	0.05
Magpie Creek	Magpie Creek	1.117	Max WS	Pre-Project_100yr_update	287.00	39.51	49.89		49.91	0.000050	1.24	295.47	64.23	0.08
Magpie Creek	Magpie Creek	1.117	Max WS	Pre-Project_200yr_update	374.23	39.51	50.03		50.07	0.000078	1.58	304.77	64.23	0.10
Magpie Creek	Magpie Creek	1.117	Max WS	Pre-Project_500yr_update	471.20	39.51	50.18		50.23	0.000116	1.94	313.86	64.23	0.12
Magpie Creek	Magpie Creek	1.117	Max WS	Post Project_500yr	240.56	40.28	50.49		50.49	0.000002	0.28	1047.32	154.75	0.02
Magpie Creek	Magpie Creek	1.117	Max WS	Post Project_200 yr	192.31	40.28	50.06		50.06	0.000001	0.23	981.43	150.15	0.01
Magpie Creek	Magpie Creek	1.117	Max WS	Post Project_100yr	249.61	40.28	49.61		49.61	0.000003	0.32	914.67	149.22	0.02
Magpie Creek	Magpie Creek	1.117	Max WS	Post Project_50yr	312.14	40.28	49.16		49.16	0.000005	0.43	847.51	148.28	0.03
Magpie Creek	Magpie Creek	1.117	Max WS	Post Project_25yr	402.71	40.28	48.68		48.69	0.000010	0.60	776.94	147.29	0.04
Magpie Creek	Magpie Creek	1.117	Max WS	Post Project_10yr	417.14	40.28	47.98		47.98	0.000016	0.69	673.68	144.72	0.05
Magpie Creek	Magpie Creek	1.117	Max WS	Post Project_2yr	357.85	40.28	46.98		46.99	0.000020	0.71	552.24	111.24	0.05
Magpie Creek	Magpie Creek	1.11 ARN-I			Lat Struct									
Magpie Creek	Magpie Creek	1.082*	Max WS	Pre-Project_2yr_update	-41.86	39.48	48.32		48.32	0.000001	-0.19	269.71	60.17	0.01
Magpie Creek	Magpie Creek	1.082*	Max WS	Pre-Project_10yr_update	-52.30	39.48	49.11		49.11	0.000001	-0.20	318.54	63.64	0.01
Magpie Creek	Magpie Creek	1.082*	Max WS	Pre-Project_25yr	42.16	39.48	49.52		49.52	0.000001	0.15	344.97	68.80	0.01
Magpie Creek	Magpie Creek	1.082*	Max WS	Pre-Project_50yr_update	147.18	39.48	49.73		49.74	0.000009	0.52	361.34	79.89	0.03
Magpie Creek	Magpie Creek	1.082*	Max WS	Pre-Project_100yr_update	265.93	39.48	49.89		49.90	0.000026	0.92	373.91	79.89	0.06
Magpie Creek	Magpie Creek	1.082*	Max WS	Pre-Project_200yr_update	383.44	39.48	50.03		50.05	0.000051	1.30	384.98	79.89	0.08
Magpie Creek	Magpie Creek	1.082*	Max WS	Pre-Project_500yr_update	481.80	39.48	50.17		50.21	0.000075	1.59	396.19	79.89	0.10
Magpie Creek	Magpie Creek	1.082*	Max WS	Post Project_500yr	231.79	40.03	50.48		50.49	0.000008	0.56	452.35	71.67	0.03
Magpie Creek	Magpie Creek	1.082*	Max WS	Post Project_200 yr	211.44	40.03	50.05		50.06	0.000008	0.54	422.98	64.32	0.03
Magpie Creek	Magpie Creek	1.082*	Max WS	Post Project_100yr	261.89	40.03	49.60		49.61	0.000015	0.71	394.34	63.35	0.05
Magpie Creek	Magpie Creek	1.082*	Max WS	Post Project_50yr	315.72	40.03	49.15		49.16	0.000028	0.92	365.68	62.42	0.06

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Magpie Creek	Magpie Creek	1.082*	Max WS	Post Project_25yr	398.14	40.03	48.66		48.68	0.000057	1.25	335.51	61.44	0.09
Magpie Creek	Magpie Creek	1.082*	Max WS	Post Project_10yr	398.57	40.03	47.95		47.98	0.000084	1.41	292.46	57.67	0.10
Magpie Creek	Magpie Creek	1.082*	Max WS	Post Project_2yr	341.41	40.03	46.95		46.98	0.000109	1.46	239.39	52.07	0.11
Magpie Creek	Magpie Creek	1.08			Lat Struct									
Magpie Creek	Magpie Creek	1.048*	Max WS	Pre-Project_2yr_update	-143.00	39.11	48.32		48.32	0.000015	-0.46	340.89	60.03	0.03
Magpie Creek	Magpie Creek	1.048*	Max WS	Pre-Project_10yr_update	-134.66	39.11	49.11		49.11	0.000009	-0.39	390.02	64.84	0.02
Magpie Creek	Magpie Creek	1.048*	Max WS	Pre-Project_25yr	0.00	39.11	49.52		49.52	0.000000	0.00	417.39	69.81	0.00
Magpie Creek	Magpie Creek	1.048*	Max WS	Pre-Project_50yr_update	97.33	39.11	49.74		49.74	0.000004	0.26	434.99	81.23	0.02
Magpie Creek	Magpie Creek	1.048*	Max WS	Pre-Project_100yr_update	178.47	39.11	49.90		49.90	0.000012	0.46	448.19	81.23	0.03
Magpie Creek	Magpie Creek	1.048*	Max WS	Pre-Project_200yr_update	290.77	39.11	50.04		50.05	0.000029	0.74	459.75	81.23	0.04
Magpie Creek	Magpie Creek	1.048*	Max WS	Pre-Project_500yr_update	394.70	39.11	50.18		50.20	0.000050	0.98	471.26	81.23	0.06
Magpie Creek	Magpie Creek	1.048*	Max WS	Post Project_500yr	283.34	39.72	50.48		50.48	0.000017	0.76	392.91	58.05	0.04
Magpie Creek	Magpie Creek	1.048*	Max WS	Post Project_200 yr	263.19	39.72	50.04		50.05	0.000017	0.74	369.08	51.54	0.04
Magpie Creek	Magpie Creek	1.048*	Max WS	Post Project_100yr	304.97	39.72	49.59		49.60	0.000027	0.91	346.06	50.52	0.06
Magpie Creek	Magpie Creek	1.048*	Max WS	Post Project_50yr	350.48	39.72	49.13		49.15	0.000043	1.11	323.04	49.61	0.07
Magpie Creek	Magpie Creek	1.048*	Max WS	Post Project_25yr	411.70	39.72	48.64		48.67	0.000074	1.40	298.90	48.63	0.09
Magpie Creek	Magpie Creek	1.048*	Max WS	Post Project_10yr	412.25	39.72	47.92		47.96	0.000105	1.56	264.51	47.06	0.11
Magpie Creek	Magpie Creek	1.048*	Max WS	Post Project_2yr	369.84	39.72	46.91		46.96	0.000139	1.67	222.11	40.16	0.12
Magpie Creek	Magpie Creek	1.014	Max WS	Pre-Project_2yr_update	-267.41	38.74	48.31		48.32	0.000085	-1.09	295.71	58.24	0.07
Magpie Creek	Magpie Creek	1.014	Max WS	Pre-Project_10yr_update	-232.96	38.74	49.10		49.11	0.000043	-0.83	343.38	62.08	0.05
Magpie Creek	Magpie Creek	1.014	Max WS	Pre-Project_25yr	-79.85	38.74	49.52		49.52	0.000004	-0.27	375.40	87.81	0.02
Magpie	Magpie	1.014	Max	Pre-	8.18	38.74	49.74		49.74	0.000000	0.03	394.77	87.81	0.00

Creek	Creek		WS	Project_50yr_update										
Magpie Creek	Magpie Creek	1.014	Max WS	Pre-Project_100yr_update	65.59	38.74	49.90		49.90	0.000002	0.21	409.21	87.81	0.01
Magpie Creek	Magpie Creek	1.014	Max WS	Pre-Project_200yr_update	126.01	38.74	50.05		50.05	0.000008	0.39	422.11	87.81	0.02
Magpie Creek	Magpie Creek	1.014	Max WS	Pre-Project_500yr_update	193.96	38.74	50.20		50.20	0.000018	0.58	434.92	87.81	0.03
Magpie Creek	Magpie Creek	1.014	Max WS	Post Project_500yr	349.83	39.43	50.47		50.48	0.000016	0.82	460.73	68.12	0.05
Magpie Creek	Magpie Creek	1.014	Max WS	Post Project_200 yr	318.38	39.43	50.04		50.05	0.000016	0.78	432.74	60.25	0.05
Magpie Creek	Magpie Creek	1.014	Max WS	Post Project_100yr	352.55	39.43	49.58		49.60	0.000024	0.92	405.68	59.26	0.06
Magpie Creek	Magpie Creek	1.014	Max WS	Post Project_50yr	382.47	39.43	49.12		49.14	0.000034	1.06	378.67	58.31	0.07
Magpie Creek	Magpie Creek	1.014	Max WS	Post Project_25yr	424.47	39.43	48.63		48.66	0.000053	1.26	350.30	57.30	0.08
Magpie Creek	Magpie Creek	1.014	Max WS	Post Project_10yr	430.58	39.43	47.91		47.94	0.000079	1.43	309.36	55.73	0.10
Magpie Creek	Magpie Creek	1.014	Max WS	Post Project_2yr	423.91	39.43	46.88		46.92	0.000129	1.68	257.14	48.59	0.13
Magpie Creek	Magpie Creek	1.0			Lat Struct									
Magpie Creek	Magpie Creek	0.907	Max WS	Pre-Project_2yr_update	753.88	38.87	47.34		47.60	0.002206	4.13	184.88	43.26	0.33
Magpie Creek	Magpie Creek	0.907	Max WS	Pre-Project_10yr_update	878.21	38.87	48.34		48.58	0.001529	3.90	242.74	71.42	0.28
Magpie Creek	Magpie Creek	0.907	Max WS	Pre-Project_25yr	881.13	38.87	48.95		49.13	0.001065	3.48	287.18	111.49	0.24
Magpie Creek	Magpie Creek	0.907	Max WS	Pre-Project_50yr_update	905.21	38.87	49.22		49.39	0.000935	3.35	317.53	111.49	0.23
Magpie Creek	Magpie Creek	0.907	Max WS	Pre-Project_100yr_update	940.72	38.87	49.40		49.56	0.000894	3.34	337.71	111.49	0.22
Magpie Creek	Magpie Creek	0.907	Max WS	Pre-Project_200yr_update	985.84	38.87	49.55		49.71	0.000889	3.37	354.15	111.49	0.22
Magpie Creek	Magpie Creek	0.907	Max WS	Pre-Project_500yr_update	1034.25	38.87	49.69		49.86	0.000891	3.42	369.92	111.49	0.23
Magpie Creek	Magpie Creek	0.907	Max WS	Post Project_500yr	1308.76	38.41	50.20		50.31	0.000198	2.69	502.51	73.33	0.16
Magpie Creek	Magpie Creek	0.907	Max WS	Post Project_200 yr	1346.33	38.41	49.70		49.84	0.000253	2.94	468.57	65.48	0.18
Magpie Creek	Magpie Creek	0.907	Max WS	Post Project_100yr	1379.31	38.41	49.18		49.34	0.000331	3.24	434.33	64.43	0.21
Magpie Creek	Magpie Creek	0.907	Max WS	Post Project_50yr	1395.97	38.41	48.63		48.82	0.000433	3.54	399.28	63.33	0.24
Magpie Creek	Magpie Creek	0.907	Max WS	Post Project_25yr	1318.83	38.41	48.11		48.31	0.000497	3.62	366.70	62.30	0.25
Magpie Creek	Magpie Creek	0.907	Max WS	Post Project_10yr	1188.32	38.41	47.35		47.56	0.000570	3.70	321.35	53.92	0.27
Magpie Creek	Magpie Creek	0.907	Max WS	Post Project_2yr	926.73	38.41	46.40		46.58	0.000546	3.41	271.86	50.01	0.26
Magpie Creek	Magpie Creek	0.9			Lat Struct									
Magpie Creek	Magpie Creek	0.812	Max WS	Pre-Project_2yr_update	754.61	37.41	46.31		46.55	0.002000	3.96	197.51	50.22	0.31
Magpie Creek	Magpie Creek	0.812	Max WS	Pre-Project_10yr_update	1006.83	37.41	47.45		47.71	0.001690	4.18	259.95	59.31	0.30
Magpie Creek	Magpie Creek	0.812	Max WS	Pre-Project_25yr	1169.24	37.41	48.09		48.36	0.001588	4.32	300.14	69.12	0.29
Magpie Creek	Magpie Creek	0.812	Max WS	Pre-Project_50yr_update	1234.41	37.41	48.39		48.66	0.001496	4.32	321.44	72.93	0.29
Magpie Creek	Magpie Creek	0.812	Max WS	Pre-Project_100yr_update	1276.41	37.41	48.62		48.88	0.001427	4.31	339.04	80.76	0.28
Magpie Creek	Magpie Creek	0.812	Max WS	Pre-Project_200yr_update	1322.87	37.41	48.77		49.04	0.001403	4.33	351.93	82.34	0.28
Magpie Creek	Magpie Creek	0.812	Max WS	Pre-Project_500yr_update	1361.70	37.41	48.94		49.20	0.001358	4.32	365.50	83.97	0.28
Magpie Creek	Magpie Creek	0.812	Max WS	Post Project_500yr	1884.61	37.56	49.88		50.08	0.000323	3.58	568.04	101.84	0.21
Magpie Creek	Magpie Creek	0.812	Max WS	Post Project_200 yr	1854.77	37.56	49.36		49.57	0.000389	3.77	518.11	89.00	0.23
Magpie Creek	Magpie Creek	0.812	Max WS	Post Project_100yr	1717.65	37.56	48.86		49.07	0.000415	3.73	475.51	83.19	0.24
Magpie Creek	Magpie Creek	0.812	Max WS	Post Project_50yr	1541.65	37.56	48.37		48.57	0.000419	3.59	436.86	73.47	0.24
Magpie Creek	Magpie Creek	0.812	Max WS	Post Project_25yr	1344.39	37.56	47.91		48.08	0.000399	3.35	404.38	66.01	0.23
Magpie Creek	Magpie Creek	0.812	Max WS	Post Project_10yr	1190.90	37.56	47.14		47.31	0.000436	3.35	355.82	56.66	0.24
Magpie Creek	Magpie Creek	0.812	Max WS	Post Project_2yr	926.51	37.56	46.20		46.34	0.000399	3.04	304.77	52.58	0.22
Magpie Creek	Magpie Creek	0.8			Lat Struct									
Magpie Creek	Magpie Creek	0.750	Max WS	Pre-Project_2yr_update	754.33	37.54	45.92	41.16	46.07	0.000913	3.03	249.19	42.07	0.22
Magpie Creek	Magpie Creek	0.750	Max WS	Pre-Project_10yr_update	1006.04	37.54	47.09	41.79	47.26	0.000985	3.35	300.44	68.08	0.23
Magpie Creek	Magpie Creek	0.750	Max WS	Pre-Project_25yr	1168.87	37.54	47.73	42.16	47.93	0.001003	3.54	330.56	84.82	0.24
Magpie Creek	Magpie Creek	0.750	Max WS	Pre-Project_50yr_update	1228.74	37.54	48.05	42.29	48.24	0.000969	3.56	345.34	92.94	0.23
Magpie Creek	Magpie Creek	0.750	Max WS	Pre-Project_100yr_update	1276.22	37.54	48.28	42.39	48.48	0.000948	3.58	356.56	100.24	0.23
Magpie Creek	Magpie Creek	0.750	Max WS	Pre-Project_200yr_update	1322.81	37.54	48.44	42.49	48.64	0.000956	3.63	363.98	104.58	0.23
Magpie Creek	Magpie Creek	0.750	Max WS	Pre-Project_500yr_update	1360.40	37.54	48.60	42.56	48.81	0.000946	3.66	371.95	104.75	0.23
Magpie Creek	Magpie Creek	0.750	Max WS	Post Project_500yr	1709.90	39.15	49.48	44.78	49.82	0.000771	4.67	367.19	89.74	0.32
Magpie Creek	Magpie Creek	0.750	Max WS	Post Project_200 yr	1849.58	39.15	48.84	45.03	49.33	0.001203	5.57	332.80	88.31	0.39
Magpie Creek	Magpie Creek	0.750	Max WS	Post Project_100yr	1715.53	39.15	48.31	44.79	48.80	0.001351	5.64	304.47	87.38	0.41
Magpie Creek	Magpie Creek	0.750	Max WS	Post Project_50yr	1541.52	39.15	47.83	44.47	48.30	0.001338	5.50	280.02	76.14	0.40
Magpie Creek	Magpie Creek	0.750	Max WS	Post Project_25yr	1344.11	39.15	47.41	44.09	47.83	0.001233	5.16	260.45	70.88	0.39
Magpie Creek	Magpie Creek	0.750	Max WS	Post Project_10yr	1188.27	39.15	46.56	43.77	47.01	0.001476	5.35	222.26	62.40	0.42
Magpie Creek	Magpie Creek	0.750	Max WS	Post Project_2yr	925.21	39.15	45.65	43.20	46.04	0.001510	5.03	183.99	52.49	0.41
Magpie Creek	Magpie Creek	0.746 Vinci Av			Bridge									
Magpie Creek	Magpie Creek	0.743	Max WS	Pre-Project_2yr_update	754.22	37.70	45.79		45.96	0.001160	3.32	227.15	39.66	0.24
Magpie Creek	Magpie Creek	0.743	Max WS	Pre-Project_10yr_update	1006.01	37.70	46.94		47.15	0.001230	3.66	274.63	42.95	0.26
Magpie Creek	Magpie Creek	0.743	Max WS	Pre-Project_25yr	1168.65	37.70	47.57		47.80	0.001242	3.87	302.53	44.99	0.26
Magpie Creek	Magpie Creek	0.743	Max WS	Pre-Project_50yr_update	1224.36	37.70	47.89		48.12	0.001189	3.87	316.87	46.00	0.26
Magpie Creek	Magpie Creek	0.743	Max WS	Pre-Project_100yr_update	1276.11	37.70	48.12		48.36	0.001170	3.91	327.81	46.85	0.25
Magpie Creek	Magpie Creek	0.743	Max WS	Pre-Project_200yr_update	1322.75	37.70	48.27		48.52	0.001181	3.97	334.95	47.42	0.26
Magpie Creek	Magpie Creek	0.743	Max WS	Pre-Project_500yr_update	1359.50	37.70	48.44		48.69	0.001167	3.99	342.89	48.04	0.26
Magpie Creek	Magpie Creek	0.743	Max WS	Post Project_500yr	1683.26	37.69	47.08		47.57	0.001257	5.66	297.44	45.90	0.39
Magpie Creek	Magpie Creek	0.743	Max WS	Post Project_200 yr	1843.23	37.69	46.86		47.50	0.001653	6.41	287.69	45.31	0.45

Magpie Creek	Magpie Creek	0.743	Max WS	Post Project_100yr	1713.07	37.69	46.59		47.19	0.001612	6.22	275.34	44.55	0.44
Magpie Creek	Magpie Creek	0.743	Max WS	Post Project_50yr	1541.20	37.69	46.11		46.68	0.001625	6.06	254.38	43.23	0.44
Magpie Creek	Magpie Creek	0.743	Max WS	Post Project_25yr	1344.08	37.69	45.73		46.22	0.001486	5.65	237.97	42.11	0.42
Magpie Creek	Magpie Creek	0.743	Max WS	Post Project_10yr	1184.95	37.69	44.76		45.31	0.001906	5.97	198.53	39.22	0.47
Magpie Creek	Magpie Creek	0.743	Max WS	Post Project_2yr	923.19	37.69	43.79		44.29	0.002025	5.70	162.03	36.14	0.47
Magpie Creek	Magpie Creek	0.74			Lat Struct									
Magpie Creek	Magpie Creek	0.714	Max WS	Pre-Project_2yr_update	754.16	36.84	45.52		45.74	0.001761	3.74	201.46	39.22	0.29

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Magpie Creek	Magpie Creek	0.714	Max WS	Pre-Project_10yr_update	1005.94	36.84	46.67		46.92	0.001729	4.06	247.76	41.66	0.29
Magpie Creek	Magpie Creek	0.714	Max WS	Pre-Project_25yr	1168.36	36.84	47.30		47.58	0.001748	4.26	274.46	43.13	0.30
Magpie Creek	Magpie Creek	0.714	Max WS	Pre-Project_50yr_update	1217.26	36.84	47.63		47.90	0.001659	4.21	288.86	44.31	0.29
Magpie Creek	Magpie Creek	0.714	Max WS	Pre-Project_100yr_update	1275.86	36.84	47.86		48.15	0.001659	4.26	299.50	45.20	0.29
Magpie Creek	Magpie Creek	0.714	Max WS	Pre-Project_200yr_update	1322.65	36.84	48.01		48.30	0.001682	4.32	306.24	45.76	0.29
Magpie Creek	Magpie Creek	0.714	Max WS	Pre-Project_500yr_update	1357.89	36.84	48.18		48.47	0.001658	4.32	314.11	46.37	0.29
Magpie Creek	Magpie Creek	0.714	Max WS	Post Project_500yr	1683.22	36.84	47.15		47.43	0.000640	4.23	397.69	59.21	0.29
Magpie Creek	Magpie Creek	0.714	Max WS	Post Project_200 yr	1849.55	36.84	46.95		47.31	0.000836	4.79	386.24	58.43	0.33
Magpie Creek	Magpie Creek	0.714	Max WS	Post Project_100yr	1713.03	36.84	46.67		47.00	0.000807	4.63	369.69	57.29	0.32
Magpie Creek	Magpie Creek	0.714	Max WS	Post Project_50yr	1541.49	36.84	46.18		46.49	0.000807	4.51	342.03	55.33	0.32
Magpie Creek	Magpie Creek	0.714	Max WS	Post Project_25yr	1344.07	36.84	45.77		46.05	0.000735	4.20	320.17	53.72	0.30
Magpie Creek	Magpie Creek	0.714	Max WS	Post Project_10yr	1186.15	36.84	44.79		45.09	0.000918	4.41	269.20	49.78	0.33
Magpie Creek	Magpie Creek	0.714	Max WS	Post Project_2yr	923.26	36.84	43.79		44.06	0.000948	4.17	221.51	45.79	0.33
Magpie Creek	Magpie Creek	0.7			Lat Struct									
Magpie Creek	Magpie Creek	0.645*	Max WS	Pre-Project_2yr_update	753.78	36.39	45.07		45.23	0.001025	3.18	237.30	40.00	0.23
Magpie Creek	Magpie Creek	0.645*	Max WS	Pre-Project_10yr_update	1005.10	36.39	46.21		46.41	0.001099	3.54	284.20	42.46	0.24
Magpie Creek	Magpie Creek	0.645*	Max WS	Pre-Project_25yr	1167.76	36.39	46.83		47.05	0.001160	3.76	310.88	43.98	0.25
Magpie Creek	Magpie Creek	0.645*	Max WS	Pre-Project_50yr_update	1200.77	36.39	47.19		47.40	0.001068	3.67	327.03	44.88	0.24
Magpie Creek	Magpie Creek	0.645*	Max WS	Pre-Project_100yr_update	1275.66	36.39	47.42		47.64	0.001108	3.78	337.26	45.45	0.24
Magpie Creek	Magpie Creek	0.645*	Max WS	Pre-Project_200yr_update	1322.50	36.39	47.56		47.79	0.001132	3.85	343.64	45.80	0.25
Magpie Creek	Magpie Creek	0.645*	Max WS	Pre-Project_500yr_update	1354.55	36.39	47.74		47.97	0.001114	3.85	351.83	46.29	0.25
Magpie Creek	Magpie Creek	0.645*	Max WS	Post Project_500yr	1683.17	35.84	47.01		47.23	0.000459	3.74	449.48	62.59	0.25
Magpie Creek	Magpie Creek	0.645*	Max WS	Post Project_200 yr	1833.38	35.84	46.77		47.04	0.000598	4.22	434.48	61.63	0.28
Magpie Creek	Magpie Creek	0.645*	Max WS	Post Project_100yr	1710.01	35.84	46.49		46.75	0.000579	4.10	417.37	60.51	0.28
Magpie Creek	Magpie Creek	0.645*	Max WS	Post Project_50yr	1541.38	35.84	45.99		46.24	0.000573	3.97	388.11	58.54	0.27
Magpie Creek	Magpie Creek	0.645*	Max WS	Post Project_25yr	1344.02	35.84	45.61		45.82	0.000511	3.67	366.03	57.01	0.26
Magpie Creek	Magpie Creek	0.645*	Max WS	Post Project_10yr	1184.01	35.84	44.58		44.81	0.000626	3.83	309.44	52.89	0.28
Magpie Creek	Magpie Creek	0.645*	Max WS	Post Project_2yr	922.13	35.84	43.58		43.78	0.000621	3.57	258.32	48.87	0.27
Magpie Creek	Magpie Creek	0.620	Max WS	Pre-Project_2yr_update	753.77	36.23	44.84		45.05	0.001802	3.66	205.83	41.98	0.29
Magpie Creek	Magpie Creek	0.620	Max WS	Pre-Project_10yr_update	1005.05	36.23	45.98		46.23	0.001712	3.94	255.28	44.55	0.29
Magpie Creek	Magpie Creek	0.620	Max WS	Pre-Project_25yr	1167.17	36.23	46.60		46.86	0.001714	4.12	283.12	45.97	0.29
Magpie Creek	Magpie Creek	0.620	Max WS	Pre-Project_50yr_update	1200.68	36.23	46.99		47.24	0.001519	3.99	301.19	46.87	0.28
Magpie Creek	Magpie Creek	0.620	Max WS	Pre-Project_100yr_update	1275.61	36.23	47.21		47.47	0.001556	4.09	311.59	47.38	0.28
Magpie Creek	Magpie Creek	0.620	Max WS	Pre-Project_200yr_update	1322.44	36.23	47.35		47.61	0.001577	4.16	318.08	47.69	0.28
Magpie Creek	Magpie Creek	0.620	Max WS	Pre-Project_500yr_update	1352.20	36.23	47.53		47.80	0.001525	4.14	326.93	48.12	0.28
Magpie Creek	Magpie Creek	0.620	Max WS	Post Project_500yr	1683.11	35.72	46.95		47.17	0.000445	3.70	454.72	62.95	0.24
Magpie Creek	Magpie Creek	0.620	Max WS	Post Project_200 yr	1819.10	35.72	46.70		46.96	0.000574	4.15	438.58	61.91	0.27
Magpie Creek	Magpie Creek	0.620	Max WS	Post Project_100yr	1709.41	35.72	46.42		46.67	0.000564	4.06	421.51	60.80	0.27
Magpie Creek	Magpie Creek	0.620	Max WS	Post Project_50yr	1541.35	35.72	45.93		46.17	0.000558	3.93	392.14	58.84	0.27
Magpie Creek	Magpie Creek	0.620	Max WS	Post Project_25yr	1343.99	35.72	45.55		45.76	0.000495	3.63	370.39	57.34	0.25
Magpie Creek	Magpie Creek	0.620	Max WS	Post Project_10yr	1183.09	35.72	44.51		44.73	0.000607	3.78	312.69	53.16	0.28
Magpie Creek	Magpie Creek	0.620	Max WS	Post Project_2yr	921.72	35.72	43.50		43.70	0.000601	3.53	261.33	49.14	0.27
Magpie Creek	Magpie Creek	0.503	Max WS	Pre-Project_2yr_update	752.94	35.54	44.01		44.16	0.001066	3.14	239.71	41.82	0.23
Magpie Creek	Magpie Creek	0.503	Max WS	Pre-Project_10yr_update	1003.45	35.54	45.16		45.35	0.001108	3.46	289.67	44.52	0.24
Magpie Creek	Magpie Creek	0.503	Max WS	Pre-Project_25yr	1162.72	35.54	45.76		45.97	0.001158	3.67	316.71	45.91	0.25
Magpie Creek	Magpie Creek	0.503	Max WS	Pre-Project_50yr_update	1200.35	35.54	46.26		46.45	0.001015	3.53	339.67	47.06	0.23
Magpie Creek	Magpie Creek	0.503	Max WS	Pre-Project_100yr_update	1275.45	35.54	46.45		46.66	0.001064	3.66	348.77	47.50	0.24
Magpie Creek	Magpie Creek	0.503	Max WS	Pre-Project_200yr_update	1139.74	35.54	46.58		46.74	0.000809	3.21	354.89	47.80	0.21
Magpie Creek	Magpie Creek	0.503	Max WS	Pre-Project_500yr_update	1133.45	35.54	46.94		47.08	0.000700	3.04	372.38	48.69	0.19
Magpie Creek	Magpie Creek	0.503	Max WS	Post Project_500yr	1683.00	35.06	46.72		46.91	0.000381	3.50	481.53	64.63	0.23
Magpie Creek	Magpie Creek	0.503	Max WS	Post Project_200 yr	1770.13	35.06	46.39		46.62	0.000475	3.84	460.66	63.33	0.25
Magpie Creek	Magpie Creek	0.503	Max WS	Post Project_100yr	1703.14	35.06	46.11		46.34	0.000489	3.84	443.12	62.21	0.25
Magpie Creek	Magpie Creek	0.503	Max WS	Post Project_50yr	1541.31	35.06	45.63		45.84	0.000483	3.73	413.23	60.26	0.25
Magpie Creek	Magpie Creek	0.503	Max WS	Post Project_25yr	1343.94	35.06	45.29		45.47	0.000420	3.42	393.22	58.91	0.23
Magpie Creek	Magpie Creek	0.503	Max WS	Post Project_10yr	1180.29	35.06	44.18		44.38	0.000520	3.57	330.29	54.47	0.26
Magpie Creek	Magpie Creek	0.503	Max WS	Post Project_2yr	919.82	35.06	43.18		43.35	0.000506	3.31	277.91	50.48	0.25

Magpie Creek	Magpie Creek	0.410	Max WS	Pre-Project_2yr_update	752.29	34.96	43.57		43.70	0.000829	2.91	258.27	43.01	0.21
Magpie Creek	Magpie Creek	0.410	Max WS	Pre-Project_10yr_update	1001.64	34.96	44.70		44.86	0.000892	3.25	308.41	45.58	0.22
Magpie Creek	Magpie Creek	0.410	Max WS	Pre-Project_25yr	1074.79	34.96	45.28		45.44	0.000814	3.21	335.10	46.88	0.21
Magpie Creek	Magpie Creek	0.410	Max WS	Pre-Project_50yr_update	1200.23	34.96	45.83		46.00	0.000821	3.32	361.47	48.12	0.21
Magpie Creek	Magpie Creek	0.410	Max WS	Pre-Project_100yr_update	1275.40	34.96	46.00		46.19	0.000872	3.45	369.58	48.49	0.22
Magpie Creek	Magpie Creek	0.410	Max WS	Pre-Project_200yr_update	1137.67	34.96	46.25		46.39	0.000635	2.98	381.60	49.10	0.19
Magpie Creek	Magpie Creek	0.410	Max WS	Pre-Project_500yr_update	1128.85	34.96	46.66		46.78	0.000542	2.81	401.99	50.13	0.17
Magpie Creek	Magpie Creek	0.410	Max WS	Post Project_500yr	1682.83	34.56	46.56		46.74	0.000337	3.34	503.87	66.00	0.21
Magpie Creek	Magpie Creek	0.410	Max WS	Post Project_200 yr	1741.20	34.56	46.20		46.40	0.000411	3.63	480.04	64.54	0.23
Magpie Creek	Magpie Creek	0.410	Max WS	Post Project_100yr	1692.51	34.56	45.91		46.12	0.000432	3.67	461.66	63.39	0.24
Magpie Creek	Magpie Creek	0.410	Max WS	Post Project_50yr	1541.29	34.56	45.42		45.62	0.000431	3.57	431.22	61.44	0.24
Magpie Creek	Magpie Creek	0.410	Max WS	Post Project_25yr	1343.92	34.56	45.12		45.28	0.000369	3.26	412.57	60.21	0.22
Magpie Creek	Magpie Creek	0.410	Max WS	Post Project_10yr	1176.77	34.56	43.96		44.14	0.000457	3.40	345.74	55.60	0.24
Magpie Creek	Magpie Creek	0.410	Max WS	Post Project_2yr	918.23	34.56	42.97		43.12	0.000438	3.14	292.63	51.63	0.23
Magpie Creek	Magpie Creek	0.354	Max WS	Pre-Project_2yr_update	751.64	34.21	43.17		43.35	0.001511	3.44	218.81	42.88	0.27
Magpie Creek	Magpie Creek	0.354	Max WS	Pre-Project_10yr_update	998.99	34.21	44.29		44.51	0.001472	3.72	268.59	45.42	0.27
Magpie Creek	Magpie Creek	0.354	Max WS	Pre-Project_25yr	1061.85	34.21	44.93		45.13	0.001235	3.57	297.85	46.85	0.25
Magpie Creek	Magpie Creek	0.354	Max WS	Pre-Project_50yr_update	1200.18	34.21	45.48		45.70	0.001239	3.70	324.17	48.10	0.25
Magpie Creek	Magpie Creek	0.354	Max WS	Pre-Project_100yr_update	1275.36	34.21	45.63		45.86	0.001316	3.85	331.16	48.42	0.26
Magpie Creek	Magpie Creek	0.354	Max WS	Pre-Project_200yr_update	1136.47	34.21	45.99		46.16	0.000901	3.26	348.86	49.24	0.22
Magpie Creek	Magpie Creek	0.354	Max WS	Pre-Project_500yr_update	1127.26	34.21	46.44		46.59	0.000741	3.03	371.49	50.23	0.20
Magpie Creek	Magpie Creek	0.354	Max WS	Post Project_500yr	1682.51	34.25	46.48		46.64	0.000310	3.24	519.65	66.97	0.20
Magpie Creek	Magpie Creek	0.354	Max WS	Post Project_200 yr	1715.42	34.25	46.09		46.28	0.000369	3.47	494.26	65.43	0.22
Magpie Creek	Magpie Creek	0.354	Max WS	Post Project_100yr	1683.29	34.25	45.80		45.99	0.000395	3.54	475.17	64.25	0.23
Magpie Creek	Magpie Creek	0.354	Max WS	Post Project_50yr	1541.29	34.25	45.31		45.50	0.000398	3.47	444.27	62.30	0.23
Magpie Creek	Magpie Creek	0.354	Max WS	Post Project_25yr	1343.92	34.25	45.02		45.17	0.000338	3.15	426.42	61.14	0.21
Magpie Creek	Magpie Creek	0.354	Max WS	Post Project_10yr	1174.24	34.25	43.84		44.01	0.000417	3.29	357.15	56.43	0.23
Magpie Creek	Magpie Creek	0.354	Max WS	Post Project_2yr	917.13	34.25	42.86		43.00	0.000396	3.02	303.51	52.49	0.22
Magpie Creek	Magpie Creek	0.29	Max WS	Pre-Project_2yr_update	750.16	34.14	42.71		42.89	0.001400	3.48	215.79	40.10	0.26
Magpie Creek	Magpie Creek	0.29	Max WS	Pre-Project_10yr_update	994.51	34.14	43.83		44.06	0.001407	3.79	262.27	42.43	0.27
Magpie Creek	Magpie Creek	0.29	Max WS	Pre-Project_25yr	1053.96	34.14	44.55		44.75	0.001164	3.59	293.31	44.52	0.25
Magpie Creek	Magpie Creek	0.29	Max WS	Pre-Project_50yr_update	1200.14	34.14	45.09		45.31	0.001212	3.77	317.96	46.11	0.25
Magpie Creek	Magpie Creek	0.29	Max WS	Pre-Project_100yr_update	1112.74	34.14	45.27		45.45	0.000972	3.41	326.13	46.62	0.23
Magpie Creek	Magpie Creek	0.29	Max WS	Pre-Project_200yr_update	1133.69	34.14	45.72		45.88	0.000851	3.26	347.27	47.93	0.21
Magpie Creek	Magpie Creek	0.29	Max WS	Pre-Project_500yr_update	1126.03	34.14	46.22		46.37	0.000686	3.03	372.04	49.79	0.19
Magpie Creek	Magpie Creek	0.29	Max WS	Post Project_500yr	1682.42	33.97	46.39		46.54	0.000292	3.17	531.25	67.62	0.20
Magpie Creek	Magpie Creek	0.29	Max WS	Post Project_200 yr	1711.53	33.97	45.99		46.17	0.000348	3.39	504.47	66.02	0.22
Magpie Creek	Magpie Creek	0.29	Max WS	Post Project_100yr	1681.10	33.97	45.69		45.87	0.000374	3.47	484.71	64.81	0.22
Magpie Creek	Magpie Creek	0.29	Max WS	Post Project_50yr	1504.06	33.97	45.20		45.37	0.000358	3.32	453.65	62.87	0.22
Magpie Creek	Magpie Creek	0.29	Max WS	Post Project_25yr	1343.92	33.97	44.92		45.07	0.000317	3.08	436.56	61.77	0.20
Magpie Creek	Magpie Creek	0.29	Max WS	Post Project_10yr	1172.12	33.97	43.72		43.88	0.000391	3.21	365.23	56.96	0.22
Magpie Creek	Magpie Creek	0.29	Max WS	Post Project_2yr	916.00	33.97	42.75		42.88	0.000368	2.94	311.43	53.05	0.21
Magpie Creek	Magpie Creek	0.28			Lat Struct									

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Magpie Creek	Magpie Creek	0.27			Lat Struct									
Magpie Creek	Magpie Creek	0.235	Max WS	Pre-Project_2yr_update	748.37	34.07	42.27		42.46	0.001389	3.52	212.53	38.56	0.26
Magpie Creek	Magpie Creek	0.235	Max WS	Pre-Project_10yr_update	983.74	34.07	43.38		43.61	0.001407	3.83	257.04	41.11	0.27
Magpie Creek	Magpie Creek	0.235	Max WS	Pre-Project_25yr	1053.35	34.07	44.18		44.39	0.001141	3.62	290.63	42.75	0.25
Magpie Creek	Magpie Creek	0.235	Max WS	Pre-Project_50yr_update	1200.11	34.07	44.71		44.94	0.001199	3.83	313.31	43.82	0.25
Magpie Creek	Magpie Creek	0.235	Max WS	Pre-Project_100yr_update	1109.17	34.07	44.97		45.15	0.000926	3.41	324.85	44.35	0.22
Magpie Creek	Magpie Creek	0.235	Max WS	Pre-Project_200yr_update	1131.75	34.07	45.46		45.62	0.000804	3.26	346.64	45.34	0.21
Magpie Creek	Magpie Creek	0.235	Max WS	Pre-Project_500yr_update	1125.03	34.07	46.01		46.16	0.000650	3.02	372.27	46.59	0.19
Magpie Creek	Magpie Creek	0.235	Max WS	Post Project_500yr	1682.33	33.91	46.29		46.45	0.000311	3.25	518.01	66.34	0.20
Magpie Creek	Magpie Creek	0.235	Max WS	Post Project_200 yr	1710.88	33.91	45.87		46.05	0.000372	3.49	490.44	64.65	0.22
Magpie Creek	Magpie Creek	0.235	Max WS	Post Project_100yr	1579.95	33.91	45.56		45.73	0.000354	3.36	470.81	63.43	0.22
Magpie Creek	Magpie Creek	0.235	Max WS	Post Project_50yr	1499.59	33.91	45.07		45.25	0.000382	3.40	440.53	61.50	0.22
Magpie Creek	Magpie Creek	0.235	Max WS	Post Project_25yr	1343.91	33.91	44.81		44.97	0.000339	3.16	424.68	60.48	0.21
Magpie Creek	Magpie Creek	0.235	Max WS	Post Project_10yr	1167.67	33.91	43.59		43.76	0.000420	3.30	353.41	55.60	0.23
Magpie Creek	Magpie Creek	0.235	Max WS	Post Project_2yr	914.49	33.91	42.62		42.76	0.000397	3.03	301.41	51.75	0.22
Magpie Creek	Magpie Creek	0.214	Max WS	Pre-Project_2yr_update	745.94	34.45	41.97	38.82	42.25	0.002322	4.20	177.82	34.93	0.33
Magpie Creek	Magpie Creek	0.214	Max WS	Pre-Project_10yr_update	966.06	34.45	43.09	39.35	43.40	0.002209	4.42	218.77	38.29	0.33
Magpie Creek	Magpie Creek	0.214	Max WS	Pre-Project_25yr	1053.24	34.45	43.96	39.56	44.23	0.001760	4.16	252.92	72.97	0.29
Magpie Creek	Magpie Creek	0.214	Max WS	Pre-Project_50yr_update	1200.06	34.45	44.47	39.89	44.77	0.001760	4.38	275.25	269.80	0.30
Magpie Creek	Magpie Creek	0.214	Max WS	Pre-Project_100yr_update	1107.53	34.45	44.80	39.68	45.03	0.001277	3.85	289.98	330.48	0.26
Magpie	Magpie	0.214	Max	Pre-	1124.86	34.45	45.32	39.72	45.52	0.001033	3.63	314.18	388.28	0.23

Creek	Creek		WS	Project_200yr_update										
Magpie Creek	Magpie Creek	0.214	Max WS	Pre-Project_500yr_update	1103.97	34.45	45.96	39.69	46.09	0.000655	3.05	512.50	415.41	0.19
Magpie Creek	Magpie Creek	0.214	Max WS	Post Project_500yr	1677.38	35.50	46.12	41.46	46.44	0.000726	4.72	550.31	403.62	0.31
Magpie Creek	Magpie Creek	0.214	Max WS	Post Project_200 yr	1639.78	35.50	45.52	41.38	45.98	0.001078	5.44	309.74	390.26	0.37
Magpie Creek	Magpie Creek	0.214	Max WS	Post Project_100yr	1496.41	35.50	45.23	41.08	45.65	0.001023	5.17	291.05	366.70	0.36
Magpie Creek	Magpie Creek	0.214	Max WS	Post Project_50yr	1467.54	35.50	44.70	41.04	45.17	0.001208	5.51	267.52	320.72	0.38
Magpie Creek	Magpie Creek	0.214	Max WS	Post Project_25yr	1343.84	35.50	44.48	40.78	44.90	0.001118	5.22	258.32	269.83	0.37
Magpie Creek	Magpie Creek	0.214	Max WS	Post Project_10yr	1150.34	35.50	43.17	40.37	43.66	0.001594	5.61	204.93	38.43	0.43
Magpie Creek	Magpie Creek	0.214	Max WS	Post Project_2yr	906.78	35.50	42.22	39.83	42.66	0.001681	5.34	169.77	35.81	0.43
Magpie Creek	Magpie Creek	0.210 Dry Creek Rd			Bridge									
Magpie Creek	Magpie Creek	0.206	Max WS	Pre-Project_2yr_update	744.22	34.28	41.85		42.07	0.001662	3.78	196.94	36.61	0.29
Magpie Creek	Magpie Creek	0.206	Max WS	Pre-Project_10yr_update	956.50	34.28	42.98		43.22	0.001637	3.98	240.08	40.68	0.29
Magpie Creek	Magpie Creek	0.206	Max WS	Pre-Project_25yr	1022.44	34.28	43.60		43.83	0.001418	3.84	267.42	53.86	0.27
Magpie Creek	Magpie Creek	0.206	Max WS	Pre-Project_50yr_update	1070.13	34.28	44.08		44.29	0.001234	3.72	289.64	114.87	0.26
Magpie Creek	Magpie Creek	0.206	Max WS	Pre-Project_100yr_update	1106.11	34.28	44.56		44.76	0.001078	3.57	312.78	279.80	0.24
Magpie Creek	Magpie Creek	0.206	Max WS	Pre-Project_200yr_update	1123.90	34.28	45.05		45.23	0.000906	3.37	337.31	394.67	0.22
Magpie Creek	Magpie Creek	0.206	Max WS	Pre-Project_500yr_update	1103.61	34.28	45.93		46.04	0.000534	2.80	531.77	402.26	0.17
Magpie Creek	Magpie Creek	0.206	Max WS	Post Project_500yr	1677.42	34.97	46.18		46.39	0.001033	3.84	635.19	404.21	0.25
Magpie Creek	Magpie Creek	0.206	Max WS	Post Project_200 yr	1668.45	34.97	45.33		45.68	0.001892	4.80	351.44	396.45	0.33
Magpie Creek	Magpie Creek	0.206	Max WS	Post Project_100yr	1469.94	34.97	44.79		45.12	0.001848	4.60	322.38	374.92	0.32
Magpie Creek	Magpie Creek	0.206	Max WS	Post Project_50yr	1394.39	34.97	44.26		44.61	0.002082	4.75	295.47	176.58	0.34
Magpie Creek	Magpie Creek	0.206	Max WS	Post Project_25yr	1217.45	34.97	43.74		44.06	0.002064	4.53	269.36	59.61	0.33
Magpie Creek	Magpie Creek	0.206	Max WS	Post Project_10yr	1146.47	34.97	43.14		43.49	0.002310	4.74	241.69	41.65	0.35
Magpie Creek	Magpie Creek	0.206	Max WS	Post Project_2yr	904.03	34.97	42.19		42.49	0.002218	4.43	203.97	37.80	0.34
Magpie Creek	Magpie Creek	0.19			Lat Struct									
Magpie Creek	Magpie Creek	0.185*	Max WS	Pre-Project_2yr_update	743.88	34.04	41.80		41.93	0.000930	2.90	259.79	55.04	0.23
Magpie Creek	Magpie Creek	0.185*	Max WS	Pre-Project_10yr_update	954.24	34.04	42.95		43.09	0.000805	3.00	326.08	59.98	0.22
Magpie Creek	Magpie Creek	0.185*	Max WS	Pre-Project_25yr	1022.09	34.04	43.59		43.72	0.000673	2.89	365.16	62.65	0.20
Magpie Creek	Magpie Creek	0.185*	Max WS	Pre-Project_50yr_update	1070.09	34.04	44.07		44.19	0.000596	2.80	396.22	69.75	0.19
Magpie Creek	Magpie Creek	0.185*	Max WS	Pre-Project_100yr_update	1104.97	34.04	44.56		44.67	0.000509	2.66	462.08	277.79	0.18
Magpie Creek	Magpie Creek	0.185*	Max WS	Pre-Project_200yr_update	1092.37	34.04	45.08		45.15	0.000350	2.31	633.69	376.18	0.15
Magpie Creek	Magpie Creek	0.185*	Max WS	Pre-Project_500yr_update	1051.48	34.04	45.95		45.98	0.000162	1.69	965.41	382.81	0.10
Magpie Creek	Magpie Creek	0.185*	Max WS	Post Project_500yr	1567.62	34.92	46.22		46.28	0.000328	2.15	1066.70	384.89	0.14
Magpie Creek	Magpie Creek	0.185*	Max WS	Post Project_200 yr	1608.47	34.92	45.40		45.52	0.000675	2.94	752.54	381.34	0.20
Magpie Creek	Magpie Creek	0.185*	Max WS	Post Project_100yr	1456.45	34.92	44.80		44.96	0.000883	3.21	531.73	332.96	0.23
Magpie Creek	Magpie Creek	0.185*	Max WS	Post Project_50yr	1345.77	34.92	44.25		44.42	0.001021	3.35	404.02	87.52	0.24
Magpie Creek	Magpie Creek	0.185*	Max WS	Post Project_25yr	1216.84	34.92	43.72		43.89	0.001050	3.32	366.83	64.08	0.24
Magpie Creek	Magpie Creek	0.185*	Max WS	Post Project_10yr	1144.48	34.92	43.10		43.29	0.001255	3.49	328.33	60.96	0.26
Magpie Creek	Magpie Creek	0.185*	Max WS	Post Project_2yr	901.98	34.92	42.12		42.30	0.001332	3.33	271.03	56.60	0.27
Magpie Creek	Magpie Creek	0.164*	Max WS	Pre-Project_2yr_update	742.54	33.81	41.72		41.83	0.000914	2.83	287.14	72.17	0.22
Magpie Creek	Magpie Creek	0.164*	Max WS	Pre-Project_10yr_update	951.47	33.81	42.90		43.01	0.000726	2.79	376.54	79.26	0.20
Magpie Creek	Magpie Creek	0.164*	Max WS	Pre-Project_25yr	1021.39	33.81	43.55		43.65	0.000587	2.62	429.67	83.11	0.19
Magpie Creek	Magpie Creek	0.164*	Max WS	Pre-Project_50yr_update	1066.21	33.81	44.05		44.13	0.000485	2.50	473.74	101.03	0.17
Magpie Creek	Magpie Creek	0.164*	Max WS	Pre-Project_100yr_update	1059.04	33.81	44.56		44.63	0.000360	2.26	546.00	193.89	0.15
Magpie Creek	Magpie Creek	0.164*	Max WS	Pre-Project_200yr_update	1008.34	33.81	45.08		45.13	0.000239	1.93	675.33	301.54	0.12
Magpie Creek	Magpie Creek	0.164*	Max WS	Pre-Project_500yr_update	960.63	33.81	45.94		45.97	0.000119	1.47	952.18	321.88	0.09
Magpie Creek	Magpie Creek	0.164*	Max WS	Post Project_500yr	1387.30	34.76	46.21		46.25	0.000244	1.70	1028.20	323.45	0.12
Magpie Creek	Magpie Creek	0.164*	Max WS	Post Project_200 yr	1444.59	34.76	45.39		45.46	0.000503	2.25	762.74	320.68	0.17
Magpie Creek	Magpie Creek	0.164*	Max WS	Post Project_100yr	1368.68	34.76	44.78		44.88	0.000682	2.52	582.62	257.14	0.20
Magpie Creek	Magpie Creek	0.164*	Max WS	Post Project_50yr	1331.57	34.76	44.20		44.32	0.000888	2.79	479.77	110.20	0.22
Magpie Creek	Magpie Creek	0.164*	Max WS	Post Project_25yr	1210.57	34.76	43.66		43.78	0.000874	2.82	429.03	84.57	0.22
Magpie Creek	Magpie Creek	0.164*	Max WS	Post Project_10yr	1138.05	34.76	43.02		43.16	0.001106	3.02	376.46	79.89	0.25
Magpie Creek	Magpie Creek	0.164*	Max WS	Post Project_2yr	897.32	34.76	42.01		42.15	0.001328	3.00	299.17	73.83	0.26
Magpie Creek	Magpie Creek	0.143	Max WS	Pre-Project_2yr_update	742.03	33.57	41.68		41.75	0.000577	2.24	385.30	106.68	0.18
Magpie Creek	Magpie Creek	0.143	Max WS	Pre-Project_10yr_update	951.03	33.57	42.88		42.94	0.000419	2.11	520.23	144.89	0.16
Magpie Creek	Magpie Creek	0.143	Max WS	Pre-Project_25yr	1021.39	33.57	43.55		43.60	0.000312	1.94	634.10	208.68	0.14
Magpie Creek	Magpie Creek	0.143	Max WS	Pre-Project_50yr_update	1065.21	33.57	44.05		44.09	0.000242	1.80	751.58	253.52	0.12
Magpie Creek	Magpie Creek	0.143	Max WS	Pre-Project_100yr_update	1039.45	33.57	44.57		44.60	0.000162	1.55	882.87	255.14	0.10
Magpie Creek	Magpie Creek	0.143	Max WS	Pre-Project_200yr_update	940.54	33.57	45.09		45.10	0.000095	1.24	1015.46	256.82	0.08
Magpie Creek	Magpie Creek	0.143	Max WS	Pre-Project_500yr_update	880.85	33.57	45.95		45.96	0.000050	0.97	1238.09	259.74	0.06
Magpie Creek	Magpie Creek	0.143	Max WS	Post Project_500yr	1231.92	34.34	46.22		46.23	0.000085	1.11	1303.53	261.24	0.07
Magpie Creek	Magpie Creek	0.143	Max WS	Post Project_200 yr	1317.47	34.34	45.40		45.42	0.000155	1.41	1090.91	257.88	0.10
Magpie Creek	Magpie Creek	0.143	Max WS	Post Project_100yr	1321.64	34.34	44.79		44.83	0.000230	1.63	934.76	255.81	0.12
Magpie Creek	Magpie Creek	0.143	Max WS	Post Project_50yr	1328.92	34.34	44.20		44.25	0.000350	1.90	784.14	253.98	0.14
Magpie Creek	Magpie Creek	0.143	Max WS	Post Project_25yr	1209.97	34.34	43.65		43.71	0.000427	1.98	649.93	213.71	0.16
Magpie Creek	Magpie Creek	0.143	Max WS	Post Project_10yr	1134.33	34.34	42.99		43.07	0.000582	2.16	530.98	150.59	0.18
Magpie Creek	Magpie Creek	0.143	Max WS	Post Project_2yr	895.48	34.34	41.96		42.04	0.000765	2.18	410.03	108.68	0.20

Magpie Creek	Magpie Creek	0.107*	Max WS	Pre-Project_2yr_update	738.56	33.53	41.54		41.63	0.000677	2.48	325.39	79.04	0.19
Magpie Creek	Magpie Creek	0.107*	Max WS	Pre-Project_10yr_update	940.71	33.53	42.77		42.85	0.000518	2.41	430.78	92.03	0.17
Magpie Creek	Magpie Creek	0.107*	Max WS	Pre-Project_25yr	1019.88	33.53	43.46		43.53	0.000407	2.30	494.44	93.86	0.16
Magpie Creek	Magpie Creek	0.107*	Max WS	Pre-Project_50yr_update	1063.31	33.53	43.97		44.04	0.000336	2.19	542.99	95.23	0.14
Magpie Creek	Magpie Creek	0.107*	Max WS	Pre-Project_100yr_update	1039.29	33.53	44.51		44.56	0.000245	1.97	594.32	96.69	0.13
Magpie Creek	Magpie Creek	0.107*	Max WS	Pre-Project_200yr_update	940.50	33.53	45.04		45.08	0.000157	1.64	646.83	98.34	0.10
Magpie Creek	Magpie Creek	0.107*	Max WS	Pre-Project_500yr_update	880.83	33.53	45.92		45.95	0.000095	1.37	734.19	100.96	0.08
Magpie Creek	Magpie Creek	0.107*	Max WS	Post Project_500yr	1231.91	34.36	46.18		46.21	0.000151	1.58	819.36	101.12	0.10
Magpie Creek	Magpie Creek	0.107*	Max WS	Post Project_200 yr	1313.55	34.36	45.34		45.39	0.000236	1.88	735.79	98.46	0.12
Magpie Creek	Magpie Creek	0.107*	Max WS	Post Project_100yr	1313.53	34.36	44.72		44.78	0.000304	2.04	675.17	96.63	0.14

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Magpie Creek	Magpie Creek	0.107*	Max WS	Post Project_50yr	1324.10	34.36	44.11		44.18	0.000405	2.25	616.79	94.84	0.16
Magpie Creek	Magpie Creek	0.107*	Max WS	Post Project_25yr	1201.06	34.36	43.55		43.62	0.000435	2.23	564.64	93.36	0.16
Magpie Creek	Magpie Creek	0.107*	Max WS	Post Project_10yr	1107.18	34.36	42.88		42.96	0.000528	2.31	502.40	91.58	0.17
Magpie Creek	Magpie Creek	0.107*	Max WS	Post Project_2yr	889.95	34.36	41.83		41.90	0.000647	2.29	407.54	88.63	0.19
Magpie Creek	Magpie Creek	0.1			Lat Struct									
Magpie Creek	Magpie Creek	0.089*	Max WS	Pre-Project_2yr_update	681.28	33.51	41.48		41.58	0.000703	2.50	288.48	65.31	0.19
Magpie Creek	Magpie Creek	0.089*	Max WS	Pre-Project_10yr_update	864.82	33.51	42.72		42.82	0.000544	2.49	371.71	68.93	0.17
Magpie Creek	Magpie Creek	0.089*	Max WS	Pre-Project_25yr	946.91	33.51	43.41		43.50	0.000460	2.43	419.97	71.03	0.16
Magpie Creek	Magpie Creek	0.089*	Max WS	Pre-Project_50yr_update	994.32	33.51	43.93		44.01	0.000399	2.36	457.12	72.74	0.15
Magpie Creek	Magpie Creek	0.089*	Max WS	Pre-Project_100yr_update	979.82	33.51	44.47		44.54	0.000306	2.15	497.04	74.54	0.13
Magpie Creek	Magpie Creek	0.089*	Max WS	Pre-Project_200yr_update	891.45	33.51	45.02		45.07	0.000202	1.81	538.41	76.36	0.11
Magpie Creek	Magpie Creek	0.089*	Max WS	Pre-Project_500yr_update	840.01	33.51	45.90		45.94	0.000129	1.52	607.36	79.83	0.09
Magpie Creek	Magpie Creek	0.089*	Max WS	Post Project_500yr	1165.50	34.16	46.15		46.20	0.000223	1.85	661.97	83.10	0.12
Magpie Creek	Magpie Creek	0.089*	Max WS	Post Project_200 yr	1232.65	34.16	45.30		45.37	0.000336	2.18	593.07	79.34	0.15
Magpie Creek	Magpie Creek	0.089*	Max WS	Post Project_100yr	1219.41	34.16	44.67		44.75	0.000420	2.35	543.97	77.04	0.16
Magpie Creek	Magpie Creek	0.089*	Max WS	Post Project_50yr	1218.96	34.16	44.05		44.15	0.000544	2.58	496.91	74.92	0.18
Magpie Creek	Magpie Creek	0.089*	Max WS	Post Project_25yr	1072.28	34.16	43.50		43.59	0.000540	2.47	455.96	73.16	0.18
Magpie Creek	Magpie Creek	0.089*	Max WS	Post Project_10yr	1006.67	34.16	42.82		42.91	0.000665	2.59	406.71	71.05	0.20
Magpie Creek	Magpie Creek	0.089*	Max WS	Post Project_2yr	813.91	34.16	41.75		41.85	0.000788	2.56	332.87	67.92	0.21
Magpie Creek	Magpie Creek	0.070*	Max WS	Pre-Project_2yr_update	595.72	33.50	41.45		41.54	0.000642	2.37	265.74	61.65	0.19
Magpie Creek	Magpie Creek	0.070*	Max WS	Pre-Project_10yr_update	776.92	33.50	42.70		42.78	0.000515	2.42	344.78	65.33	0.17
Magpie Creek	Magpie Creek	0.070*	Max WS	Pre-Project_25yr	859.31	33.50	43.39		43.47	0.000441	2.38	390.91	67.79	0.16
Magpie Creek	Magpie Creek	0.070*	Max WS	Pre-Project_50yr_update	908.00	33.50	43.91		43.99	0.000385	2.31	426.57	69.43	0.15
Magpie Creek	Magpie Creek	0.070*	Max WS	Pre-Project_100yr_update	910.71	33.50	44.45		44.52	0.000304	2.14	464.77	71.10	0.13
Magpie Creek	Magpie Creek	0.070*	Max WS	Pre-Project_200yr_update	855.93	33.50	45.00		45.05	0.000214	1.86	504.34	73.10	0.11
Magpie Creek	Magpie Creek	0.070*	Max WS	Pre-Project_500yr_update	827.02	33.50	45.89		45.93	0.000142	1.60	570.70	76.44	0.09
Magpie Creek	Magpie Creek	0.070*	Max WS	Post Project_500yr	1074.68	34.71	46.15		46.19	0.000187	1.68	665.90	81.97	0.11
Magpie Creek	Magpie Creek	0.070*	Max WS	Post Project_200 yr	1113.82	34.71	45.30		45.35	0.000271	1.94	597.80	78.70	0.13
Magpie Creek	Magpie Creek	0.070*	Max WS	Post Project_100yr	1095.13	34.71	44.67		44.73	0.000334	2.07	548.98	76.45	0.14
Magpie Creek	Magpie Creek	0.070*	Max WS	Post Project_50yr	1081.61	34.71	44.05		44.12	0.000420	2.23	502.31	74.33	0.16
Magpie Creek	Magpie Creek	0.070*	Max WS	Post Project_25yr	945.38	34.71	43.49		43.56	0.000409	2.12	461.63	72.55	0.16
Magpie Creek	Magpie Creek	0.070*	Max WS	Post Project_10yr	872.71	34.71	42.81		42.88	0.000482	2.18	412.87	70.24	0.17
Magpie Creek	Magpie Creek	0.070*	Max WS	Post Project_2yr	683.06	34.71	41.75		41.81	0.000523	2.06	340.00	66.98	0.17
Magpie Creek	Magpie Creek	0.052*	Max WS	Pre-Project_2yr_update	556.13	33.48	41.44		41.49	0.000374	1.96	304.43	62.41	0.14
Magpie Creek	Magpie Creek	0.052*	Max WS	Pre-Project_10yr_update	741.87	33.48	42.68		42.75	0.000347	2.10	384.99	66.70	0.14
Magpie Creek	Magpie Creek	0.052*	Max WS	Pre-Project_25yr	826.59	33.48	43.38		43.44	0.000313	2.10	432.04	68.76	0.13
Magpie Creek	Magpie Creek	0.052*	Max WS	Pre-Project_50yr_update	877.94	33.48	43.90		43.96	0.000282	2.06	468.21	70.25	0.12
Magpie Creek	Magpie Creek	0.052*	Max WS	Pre-Project_100yr_update	888.18	33.48	44.44		44.50	0.000232	1.94	506.91	71.89	0.11
Magpie Creek	Magpie Creek	0.052*	Max WS	Pre-Project_200yr_update	847.73	33.48	44.99		45.03	0.000171	1.72	546.91	73.56	0.10
Magpie Creek	Magpie Creek	0.052*	Max WS	Pre-Project_500yr_update	824.55	33.48	45.88		45.91	0.000119	1.50	613.61	76.47	0.08
Magpie Creek	Magpie Creek	0.052*	Max WS	Post Project_500yr	1024.29	34.53	46.13		46.17	0.000178	1.72	620.12	77.75	0.11
Magpie Creek	Magpie Creek	0.052*	Max WS	Post Project_200 yr	1038.87	34.53	45.28		45.33	0.000250	1.94	555.38	74.61	0.13
Magpie Creek	Magpie Creek	0.052*	Max WS	Post Project_100yr	1003.38	34.53	44.65		44.71	0.000300	2.05	509.02	72.63	0.14
Magpie Creek	Magpie Creek	0.052*	Max WS	Post Project_50yr	976.67	34.53	44.03		44.10	0.000371	2.18	464.46	70.76	0.15
Magpie Creek	Magpie Creek	0.052*	Max WS	Post Project_25yr	850.25	34.53	43.47		43.54	0.000364	2.07	425.72	69.15	0.15
Magpie Creek	Magpie Creek	0.052*	Max WS	Post Project_10yr	774.65	34.53	42.79		42.85	0.000426	2.12	379.00	67.13	0.16
Magpie Creek	Magpie Creek	0.052*	Max WS	Post Project_2yr	595.59	34.53	41.72		41.78	0.000459	1.99	309.25	63.69	0.16
Magpie Creek	Magpie Creek	0.035	Max WS	Pre-Project_2yr_update	550.96	33.46	41.40		41.46	0.000393	2.36	303.05	63.12	0.16
Magpie Creek	Magpie Creek	0.035	Max WS	Pre-Project_10yr_update	736.29	33.46	42.65		42.72	0.000362	2.52	384.17	66.92	0.15
Magpie Creek	Magpie Creek	0.035	Max WS	Pre-Project_25yr	822.01	33.46	43.34		43.41	0.000325	2.52	431.63	69.04	0.15
Magpie Creek	Magpie Creek	0.035	Max WS	Pre-Project_50yr_update	874.41	33.46	43.87		43.93	0.000293	2.49	468.18	70.66	0.14
Magpie Creek	Magpie Creek	0.035	Max WS	Pre-Project_100yr_update	886.95	33.46	44.42		44.48	0.000241	2.34	507.50	72.40	0.13
Magpie Creek	Magpie Creek	0.035	Max WS	Pre-Project_200yr_update	847.63	33.46	44.97		45.02	0.000178	2.08	548.29	74.17	0.11
Magpie Creek	Magpie Creek	0.035	Max WS	Pre-Project_500yr_update	824.49	33.46	45.87		45.90	0.000122	1.82	615.99	77.01	0.09

Magpie Creek	Magpie Creek	0.035	Max WS	Post Project_500yr	1019.20	34.21	46.09		46.15	0.000279	1.93	527.00	68.34	0.12
Magpie Creek	Magpie Creek	0.035	Max WS	Post Project_200 yr	1025.23	34.21	45.23		45.31	0.000388	2.18	469.37	65.36	0.14
Magpie Creek	Magpie Creek	0.035	Max WS	Post Project_100yr	981.83	34.21	44.60		44.68	0.000458	2.29	428.52	63.20	0.16
Magpie Creek	Magpie Creek	0.035	Max WS	Post Project_50yr	946.08	34.21	43.96		44.06	0.000555	2.43	389.34	61.08	0.17
Magpie Creek	Magpie Creek	0.035	Max WS	Post Project_25yr	826.96	34.21	43.41		43.50	0.000547	2.32	356.07	59.45	0.17
Magpie Creek	Magpie Creek	0.035	Max WS	Post Project_10yr	752.00	34.21	42.72		42.81	0.000639	2.38	315.48	57.42	0.18
Magpie Creek	Magpie Creek	0.035	Max WS	Post Project_2yr	576.96	34.21	41.65		41.73	0.000690	2.25	255.89	54.31	0.18
Dry_Creek	Left Branch	2.82	Max WS	Pre-Project_2yr_update	1804.16	35.38	47.73		47.76	0.001393	1.58	1241.42	393.34	0.09
Dry_Creek	Left Branch	2.82	Max WS	Pre-Project_10yr_update	4578.37	35.38	49.54		49.62	0.002202	2.24	2217.37	612.36	0.12
Dry_Creek	Left Branch	2.82	Max WS	Pre-Project_25yr	6666.47	35.38	50.34		50.45	0.002708	2.60	2723.84	645.21	0.13
Dry_Creek	Left Branch	2.82	Max WS	Pre-Project_50yr_update	8546.29	35.38	50.93		51.07	0.003091	2.87	3106.14	659.03	0.14
Dry_Creek	Left Branch	2.82	Max WS	Pre-Project_100yr_update	10685.59	35.38	51.51		51.68	0.003469	3.13	3494.40	677.07	0.15
Dry_Creek	Left Branch	2.82	Max WS	Pre-Project_200yr_update	13153.62	35.38	52.11		52.31	0.003833	3.39	3904.34	695.77	0.16
Dry_Creek	Left Branch	2.82	Max WS	Pre-Project_500yr_update	16673.96	35.38	52.86		53.11	0.004207	3.68	4435.40	707.90	0.17
Dry_Creek	Left Branch	2.82	Max WS	Post Project_500yr	16673.60	35.38	52.86		53.11	0.004207	3.68	4435.32	707.90	0.17
Dry_Creek	Left Branch	2.82	Max WS	Post Project_200 yr	13153.41	35.38	52.11		52.31	0.003833	3.39	3904.29	695.77	0.16
Dry_Creek	Left Branch	2.82	Max WS	Post Project_100yr	10685.67	35.38	51.51		51.68	0.003469	3.13	3494.37	677.07	0.15
Dry_Creek	Left Branch	2.82	Max WS	Post Project_50yr	8546.29	35.38	50.93		51.07	0.003091	2.87	3106.13	659.03	0.14
Dry_Creek	Left Branch	2.82	Max WS	Post Project_25yr	6666.41	35.38	50.34		50.45	0.002708	2.60	2723.84	645.21	0.13
Dry_Creek	Left Branch	2.82	Max WS	Post Project_10yr	4578.37	35.38	49.54		49.62	0.002202	2.24	2217.37	612.36	0.12
Dry_Creek	Left Branch	2.82	Max WS	Post Project_2yr	1804.20	35.38	47.73		47.76	0.001393	1.58	1241.44	393.34	0.09
Dry_Creek	Left Branch	2.819	Max WS	Pre-Project_2yr_update	1804.16	35.38	47.68		47.77	0.003184	2.38	803.79	213.39	0.14
Dry_Creek	Left Branch	2.819	Max WS	Pre-Project_10yr_update	4578.37	35.38	49.43		49.63	0.006837	3.91	1428.62	435.25	0.21
Dry_Creek	Left Branch	2.819	Max WS	Pre-Project_25yr	6666.38	35.38	50.20		50.46	0.008634	4.60	1777.14	469.20	0.24
Dry_Creek	Left Branch	2.819	Max WS	Pre-Project_50yr_update	8546.28	35.38	50.76		51.07	0.009861	5.07	2042.91	482.11	0.26
Dry_Creek	Left Branch	2.819	Max WS	Pre-Project_100yr_update	10685.59	35.38	51.31		51.68	0.011025	5.52	2312.61	497.89	0.27
Dry_Creek	Left Branch	2.819	Max WS	Pre-Project_200yr_update	13153.62	35.38	51.87		52.31	0.012113	5.96	2598.40	515.55	0.29
Dry_Creek	Left Branch	2.819	Max WS	Pre-Project_500yr_update	16673.69	35.38	52.58		53.10	0.013282	6.46	2971.89	535.00	0.30
Dry_Creek	Left Branch	2.819	Max WS	Post Project_500yr	16672.89	35.38	52.58		53.10	0.013281	6.46	2971.81	535.00	0.30
Dry_Creek	Left Branch	2.819	Max WS	Post Project_200 yr	13153.41	35.38	51.87		52.31	0.012113	5.96	2598.35	515.55	0.29
Dry_Creek	Left Branch	2.819	Max WS	Post Project_100yr	10685.40	35.38	51.31		51.68	0.011025	5.52	2312.57	497.89	0.27
Dry_Creek	Left Branch	2.819	Max WS	Post Project_50yr	8546.28	35.38	50.76		51.07	0.009861	5.07	2042.90	482.11	0.26
Dry_Creek	Left Branch	2.819	Max WS	Post Project_25yr	6666.41	35.38	50.20		50.46	0.008634	4.60	1777.14	469.20	0.24
Dry_Creek	Left Branch	2.819	Max WS	Post Project_10yr	4578.37	35.38	49.43		49.63	0.006837	3.91	1428.62	435.25	0.21
Dry_Creek	Left Branch	2.819	Max WS	Post Project_2yr	1804.21	35.38	47.68		47.77	0.003184	2.38	803.80	213.40	0.14
Dry_Creek	Left Branch	2.817			Lat Struct									
Dry_Creek	Left Branch	2.804	Max WS	Pre-Project_2yr_update	1640.82	37.77	47.35		47.46	0.006199	2.74	658.78	317.71	0.18
Dry_Creek	Left Branch	2.804	Max WS	Pre-Project_10yr_update	3979.70	37.77	48.96		49.12	0.008672	3.73	1346.92	505.96	0.22
Dry_Creek	Left Branch	2.804	Max WS	Pre-Project_25yr	5822.35	37.77	49.65		49.86	0.009819	4.18	1718.82	543.03	0.24
Dry_Creek	Left Branch	2.804	Max WS	Pre-Project_50yr_update	7504.07	37.77	50.17		50.41	0.010422	4.46	2003.28	550.00	0.25
Dry_Creek	Left Branch	2.804	Max WS	Pre-Project_100yr_update	9433.29	37.77	50.69		50.97	0.010904	4.73	2287.95	550.00	0.26
Dry_Creek	Left Branch	2.804	Max WS	Pre-Project_200yr_update	11672.69	37.77	51.22		51.55	0.011377	4.99	2580.67	550.00	0.27
Dry_Creek	Left Branch	2.804	Max WS	Pre-Project_500yr_update	14886.66	37.77	51.90		52.30	0.011963	5.33	2951.36	550.00	0.28
Dry_Creek	Left Branch	2.804	Max WS	Post Project_500yr	14886.29	37.77	51.90		52.30	0.011964	5.33	2951.28	550.00	0.28

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Dry_Creek	Left Branch	2.804	Max WS	Post Project_200 yr	11672.45	37.77	51.22		51.55	0.011377	4.99	2580.61	550.00	0.27
Dry_Creek	Left Branch	2.804	Max WS	Post Project_100yr	9433.17	37.77	50.69		50.97	0.010905	4.73	2287.91	550.00	0.26
Dry_Creek	Left Branch	2.804	Max WS	Post Project_50yr	7503.90	37.77	50.17		50.41	0.010421	4.46	2003.26	550.00	0.25
Dry_Creek	Left Branch	2.804	Max WS	Post Project_25yr	5822.37	37.77	49.65		49.86	0.009819	4.18	1718.82	543.03	0.24
Dry_Creek	Left Branch	2.804	Max WS	Post Project_10yr	3979.71	37.77	48.96		49.12	0.008672	3.73	1346.92	505.96	0.22
Dry_Creek	Left Branch	2.804	Max WS	Post Project_2yr	1640.87	37.77	47.35		47.46	0.006199	2.74	658.79	317.72	0.18
Dry_Creek	Left Branch	2.789*	Max WS	Pre-Project_2yr_update	1639.22	36.97	47.03		47.16	0.001295	2.92	660.47	405.47	0.19
Dry_Creek	Left Branch	2.789*	Max WS	Pre-Project_10yr_update	3717.85	36.97	48.49		48.73	0.002312	4.41	1407.53	528.21	0.26
Dry_Creek	Left Branch	2.789*	Max WS	Pre-Project_25yr	5371.09	36.97	49.09		49.42	0.003187	5.41	1728.68	546.04	0.31
Dry_Creek	Left Branch	2.789*	Max WS	Pre-Project_50yr_update	6888.70	36.97	49.54		49.95	0.003863	6.15	1979.96	551.51	0.35
Dry_Creek	Left Branch	2.789*	Max WS	Pre-Project_100yr_update	8635.86	36.97	50.01		50.49	0.004510	6.86	2236.66	551.51	0.38
Dry_Creek	Left Branch	2.789*	Max WS	Pre-Project_200yr_update	10671.46	36.97	50.49		51.05	0.005158	7.57	2503.61	551.51	0.41
Dry_Creek	Left Branch	2.789*	Max WS	Pre-Project_500yr_update	13604.96	36.97	51.11		51.78	0.005954	8.44	2845.00	551.51	0.44
Dry_Creek	Left Branch	2.789*	Max WS	Post Project_500yr	13604.36	36.97	51.11		51.78	0.005954	8.44	2844.91	551.51	0.44
Dry_Creek	Left Branch	2.789*	Max WS	Post Project_200 yr	10671.20	36.97	50.49		51.05	0.005159	7.57	2503.55	551.51	0.41
Dry_Creek	Left Branch	2.789*	Max WS	Post Project_100yr	8635.67	36.97	50.01		50.49	0.004510	6.86	2236.62	551.51	0.38
Dry_Creek	Left Branch	2.789*	Max WS	Post Project_50yr	6888.63	36.97	49.54		49.95	0.003863	6.15	1979.93	551.51	0.35
Dry_Creek	Left Branch	2.789*	Max WS	Post Project_25yr	5371.06	36.97	49.09		49.42	0.003187	5.41	1728.68	546.04	0.31
Dry_Creek	Left Branch	2.789*	Max WS	Post Project_10yr	3717.85	36.97	48.49		48.73	0.002312	4.41	1407.53	528.21	0.26
Dry_Creek	Left Branch	2.789*	Max WS	Post Project_2yr	1639.21	36.97	47.03		47.16	0.001294	2.92	660.49	405.48	0.19

Dry_Creek	Left Branch	2.774*	Max WS	Pre-Project_2yr_update	1639.12	36.16	46.94		47.06	0.001183	2.80	813.07	488.56	0.18
Dry_Creek	Left Branch	2.774*	Max WS	Pre-Project_10yr_update	3553.15	36.16	48.38		48.56	0.001866	3.94	1570.36	549.12	0.23
Dry_Creek	Left Branch	2.774*	Max WS	Pre-Project_25yr	5058.85	36.16	48.93		49.18	0.002579	4.82	1880.32	558.90	0.27
Dry_Creek	Left Branch	2.774*	Max WS	Pre-Project_50yr_update	6443.74	36.16	49.36		49.66	0.003136	5.47	2119.28	558.90	0.30
Dry_Creek	Left Branch	2.774*	Max WS	Pre-Project_100yr_update	8040.56	36.16	49.80		50.16	0.003705	6.12	2362.89	558.90	0.33
Dry_Creek	Left Branch	2.774*	Max WS	Pre-Project_200yr_update	9904.66	36.16	50.25		50.68	0.004292	6.77	2617.19	558.90	0.36
Dry_Creek	Left Branch	2.774*	Max WS	Pre-Project_500yr_update	12597.78	36.16	50.84		51.35	0.005030	7.59	2943.94	558.90	0.39
Dry_Creek	Left Branch	2.774*	Max WS	Post Project_500yr	12597.20	36.16	50.84		51.35	0.005030	7.59	2943.85	558.90	0.39
Dry_Creek	Left Branch	2.774*	Max WS	Post Project_200 yr	9904.16	36.16	50.25		50.68	0.004291	6.77	2617.14	558.90	0.36
Dry_Creek	Left Branch	2.774*	Max WS	Post Project_100yr	8040.31	36.16	49.80		50.16	0.003705	6.12	2362.85	558.90	0.33
Dry_Creek	Left Branch	2.774*	Max WS	Post Project_50yr	6443.69	36.16	49.36		49.66	0.003136	5.47	2119.25	558.90	0.30
Dry_Creek	Left Branch	2.774*	Max WS	Post Project_25yr	5058.89	36.16	48.93		49.18	0.002579	4.82	1880.32	558.90	0.27
Dry_Creek	Left Branch	2.774*	Max WS	Post Project_10yr	3553.15	36.16	48.38		48.56	0.001866	3.94	1570.36	549.12	0.23
Dry_Creek	Left Branch	2.774*	Max WS	Post Project_2yr	1639.12	36.16	46.94		47.06	0.001183	2.80	813.09	488.57	0.18
Dry_Creek	Left Branch	2.758*	Max WS	Pre-Project_2yr_update	1639.00	35.35	46.86		46.97	0.001119	2.73	915.32	493.50	0.17
Dry_Creek	Left Branch	2.758*	Max WS	Pre-Project_10yr_update	3434.39	35.35	48.26		48.41	0.001657	3.69	1670.27	564.47	0.21
Dry_Creek	Left Branch	2.758*	Max WS	Pre-Project_25yr	4814.71	35.35	48.78		48.99	0.002267	4.48	1964.47	566.30	0.25
Dry_Creek	Left Branch	2.758*	Max WS	Pre-Project_50yr_update	6084.79	35.35	49.18		49.43	0.002767	5.08	2189.81	566.30	0.28
Dry_Creek	Left Branch	2.758*	Max WS	Pre-Project_100yr_update	7550.22	35.35	49.59		49.89	0.003291	5.68	2419.52	566.30	0.30
Dry_Creek	Left Branch	2.758*	Max WS	Pre-Project_200yr_update	9263.23	35.35	50.01		50.37	0.003844	6.30	2659.67	566.30	0.33
Dry_Creek	Left Branch	2.758*	Max WS	Pre-Project_500yr_update	11743.41	35.35	50.56		50.99	0.004555	7.07	2969.26	566.30	0.36
Dry_Creek	Left Branch	2.758*	Max WS	Post Project_500yr	11742.27	35.35	50.56		50.99	0.004554	7.07	2969.18	566.30	0.36
Dry_Creek	Left Branch	2.758*	Max WS	Post Project_200 yr	9262.84	35.35	50.01		50.37	0.003844	6.30	2659.63	566.30	0.33
Dry_Creek	Left Branch	2.758*	Max WS	Post Project_100yr	7549.86	35.35	49.59		49.89	0.003291	5.68	2419.49	566.30	0.30
Dry_Creek	Left Branch	2.758*	Max WS	Post Project_50yr	6084.62	35.35	49.18		49.43	0.002767	5.08	2189.78	566.30	0.28
Dry_Creek	Left Branch	2.758*	Max WS	Post Project_25yr	4814.68	35.35	48.78		48.99	0.002267	4.48	1964.47	566.30	0.25
Dry_Creek	Left Branch	2.758*	Max WS	Post Project_10yr	3434.39	35.35	48.26		48.41	0.001657	3.69	1670.27	564.47	0.21
Dry_Creek	Left Branch	2.758*	Max WS	Post Project_2yr	1638.98	35.35	46.86		46.97	0.001119	2.73	915.33	493.51	0.17
Dry_Creek	Left Branch	2.743	Max WS	Pre-Project_2yr_update	1638.92	34.55	46.79		46.87	0.001023	2.56	1066.29	499.24	0.16
Dry_Creek	Left Branch	2.743	Max WS	Pre-Project_10yr_update	3354.76	34.55	48.17		48.28	0.001427	3.34	1822.53	572.18	0.19
Dry_Creek	Left Branch	2.743	Max WS	Pre-Project_25yr	4629.44	34.55	48.66		48.81	0.001924	4.01	2103.60	573.70	0.22
Dry_Creek	Left Branch	2.743	Max WS	Pre-Project_50yr_update	5801.03	34.55	49.03		49.22	0.002344	4.53	2317.83	573.70	0.24
Dry_Creek	Left Branch	2.743	Max WS	Pre-Project_100yr_update	7152.43	34.55	49.41		49.63	0.002794	5.07	2535.86	573.70	0.27
Dry_Creek	Left Branch	2.743	Max WS	Pre-Project_200yr_update	8733.54	34.55	49.81		50.08	0.003279	5.62	2763.81	573.70	0.29
Dry_Creek	Left Branch	2.743	Max WS	Pre-Project_500yr_update	11025.97	34.55	50.32		50.65	0.003916	6.32	3058.10	573.70	0.32
Dry_Creek	Left Branch	2.743	Max WS	Post Project_500yr	11025.09	34.55	50.32		50.65	0.003916	6.32	3058.04	573.70	0.32
Dry_Creek	Left Branch	2.743	Max WS	Post Project_200 yr	8733.14	34.55	49.81		50.08	0.003279	5.62	2763.77	573.70	0.29
Dry_Creek	Left Branch	2.743	Max WS	Post Project_100yr	7152.08	34.55	49.41		49.63	0.002794	5.07	2535.82	573.70	0.27
Dry_Creek	Left Branch	2.743	Max WS	Post Project_50yr	5800.75	34.55	49.03		49.22	0.002344	4.53	2317.81	573.70	0.24
Dry_Creek	Left Branch	2.743	Max WS	Post Project_25yr	4629.43	34.55	48.66		48.81	0.001924	4.01	2103.60	573.70	0.22
Dry_Creek	Left Branch	2.743	Max WS	Post Project_10yr	3354.79	34.55	48.17		48.28	0.001427	3.34	1822.53	572.18	0.19
Dry_Creek	Left Branch	2.743	Max WS	Post Project_2yr	1638.92	34.55	46.79		46.87	0.001023	2.56	1066.31	499.24	0.16
Dry_Creek	Left Branch	2.727*	Max WS	Pre-Project_2yr_update	1638.94	35.01	46.75		46.79	0.000631	2.01	1425.15	507.76	0.12
Dry_Creek	Left Branch	2.727*	Max WS	Pre-Project_10yr_update	3256.83	35.01	48.10		48.17	0.000906	2.67	2150.65	555.21	0.15
Dry_Creek	Left Branch	2.727*	Max WS	Pre-Project_25yr	4385.13	35.01	48.58		48.66	0.001232	3.21	2412.19	555.56	0.18
Dry_Creek	Left Branch	2.727*	Max WS	Pre-Project_50yr_update	5418.07	35.01	48.93		49.04	0.001505	3.63	2611.10	555.56	0.20
Dry_Creek	Left Branch	2.727*	Max WS	Pre-Project_100yr_update	6608.92	35.01	49.30		49.43	0.001809	4.07	2813.20	555.56	0.22
Dry_Creek	Left Branch	2.727*	Max WS	Pre-Project_200yr_update	8002.81	35.01	49.68		49.84	0.002150	4.54	3024.43	555.56	0.24
Dry_Creek	Left Branch	2.727*	Max WS	Pre-Project_500yr_update	10028.09	35.01	50.17		50.38	0.002615	5.15	3297.29	555.56	0.26
Dry_Creek	Left Branch	2.727*	Max WS	Post Project_500yr	10027.07	35.01	50.17		50.38	0.002615	5.15	3297.25	555.56	0.26
Dry_Creek	Left Branch	2.727*	Max WS	Post Project_200 yr	8002.39	35.01	49.68		49.84	0.002149	4.54	3024.40	555.56	0.24
Dry_Creek	Left Branch	2.727*	Max WS	Post Project_100yr	6608.68	35.01	49.30		49.43	0.001809	4.07	2813.18	555.56	0.22
Dry_Creek	Left Branch	2.727*	Max WS	Post Project_50yr	5417.91	35.01	48.93		49.04	0.001505	3.63	2611.07	555.56	0.20
Dry_Creek	Left Branch	2.727*	Max WS	Post Project_25yr	4385.10	35.01	48.58		48.66	0.001232	3.21	2412.19	555.56	0.18
Dry_Creek	Left Branch	2.727*	Max WS	Post Project_10yr	3256.83	35.01	48.10		48.17	0.000906	2.67	2150.65	555.21	0.15
Dry_Creek	Left Branch	2.727*	Max WS	Post Project_2yr	1638.94	35.01	46.75		46.79	0.000631	2.01	1425.17	507.77	0.12
Dry_Creek	Left Branch	2.711*	Max WS	Pre-Project_2yr_update	1638.88	35.47	46.69		46.74	0.000716	2.14	1338.43	488.96	0.13
Dry_Creek	Left Branch	2.711*	Max WS	Pre-Project_10yr_update	3162.94	35.47	48.02		48.09	0.000985	2.77	2021.24	526.79	0.16
Dry_Creek	Left Branch	2.711*	Max WS	Pre-Project_25yr	4152.23	35.47	48.47		48.56	0.001272	3.25	2261.73	537.42	0.18
Dry_Creek	Left Branch	2.711*	Max WS	Pre-Project_50yr_update	5054.75	35.47	48.82		48.93	0.001518	3.63	2445.42	537.42	0.20
Dry_Creek	Left Branch	2.711*	Max WS	Pre-Project_100yr_update	6094.96	35.47	49.16		49.30	0.001792	4.03	2631.50	537.42	0.22
Dry_Creek	Left Branch	2.711*	Max WS	Pre-Project_200yr_update	7314.24	35.47	49.52		49.68	0.002102	4.46	2825.55	537.42	0.24
Dry_Creek	Left Branch	2.711*	Max WS	Pre-Project_500yr_update	9089.57	35.47	49.99		50.19	0.002531	5.03	3075.87	537.42	0.26
Dry_Creek	Left Branch	2.711*	Max WS	Post Project_500yr	9088.62	35.47	49.99		50.19	0.002531	5.03	3075.85	537.42	0.26
Dry_Creek	Left Branch	2.711*	Max WS	Post Project_200 yr	7313.53	35.47	49.52		49.68	0.002102	4.46	2825.54	537.42	0.24
Dry_Creek	Left Branch	2.711*	Max WS	Post Project_100yr	6094.61	35.47	49.16		49.30	0.001792	4.03	2631.49	537.42	0.22
Dry_Creek	Left Branch	2.711*	Max WS	Post Project_50yr	5054.57	35.47	48.82		48.93	0.001517	3.63	2445.40	537.42	0.20
Dry_Creek	Left Branch	2.711*	Max WS	Post Project_25yr	4152.22	35.47	48.47		48.56	0.001272	3.25	2261.73	537.42	0.18

Dry_Creek	Left Branch	2.711*	Max WS	Post Project_10yr	3162.90	35.47	48.02		48.09	0.000984	2.77	2021.25	526.80	0.16
Dry_Creek	Left Branch	2.711*	Max WS	Post Project_2yr	1638.89	35.47	46.69		46.74	0.000716	2.14	1338.45	488.96	0.13
Dry_Creek	Left Branch	2.695*	Max WS	Pre-Project_2yr_update	1638.82	35.93	46.62		46.67	0.000822	2.28	1244.47	469.17	0.14
Dry_Creek	Left Branch	2.695*	Max WS	Pre-Project_10yr_update	3075.16	35.93	47.94		48.01	0.001062	2.86	1891.15	504.61	0.16
Dry_Creek	Left Branch	2.695*	Max WS	Pre-Project_25yr	3933.74	35.93	48.37		48.46	0.001299	3.26	2111.37	507.53	0.18
Dry_Creek	Left Branch	2.695*	Max WS	Pre-Project_50yr_update	4714.34	35.93	48.70		48.81	0.001529	3.61	2278.00	513.51	0.20
Dry_Creek	Left Branch	2.695*	Max WS	Pre-Project_100yr_update	5614.18	35.93	49.03		49.16	0.001788	3.99	2448.67	519.28	0.22
Dry_Creek	Left Branch	2.695*	Max WS	Pre-Project_200yr_update	6670.66	35.93	49.37		49.53	0.002065	4.38	2627.59	519.28	0.23
Dry_Creek	Left Branch	2.695*	Max WS	Pre-Project_500yr_update	8214.46	35.93	49.82		50.01	0.002454	4.90	2857.81	519.28	0.26
Dry_Creek	Left Branch	2.695*	Max WS	Post Project_500yr	8213.32	35.93	49.82		50.01	0.002453	4.90	2857.81	519.28	0.26
Dry_Creek	Left Branch	2.695*	Max WS	Post Project_200 yr	6670.16	35.93	49.37		49.53	0.002064	4.38	2627.59	519.28	0.23
Dry_Creek	Left Branch	2.695*	Max WS	Post Project_100yr	5613.85	35.93	49.03		49.16	0.001788	3.99	2448.66	519.28	0.22

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Dry_Creek	Left Branch	2.695*	Max WS	Post Project_50yr	4714.10	35.93	48.70		48.81	0.001529	3.61	2277.99	513.51	0.20
Dry_Creek	Left Branch	2.695*	Max WS	Post Project_25yr	3933.74	35.93	48.37		48.46	0.001299	3.26	2111.37	507.53	0.18
Dry_Creek	Left Branch	2.695*	Max WS	Post Project_10yr	3075.16	35.93	47.94		48.01	0.001062	2.86	1891.15	504.61	0.16
Dry_Creek	Left Branch	2.695*	Max WS	Post Project_2yr	1638.85	35.93	46.62		46.67	0.000822	2.28	1244.49	469.17	0.14
Dry_Creek	Left Branch	2.679*	Max WS	Pre-Project_2yr_update	1638.78	36.39	46.54		46.60	0.000955	2.42	1147.25	447.57	0.15
Dry_Creek	Left Branch	2.679*	Max WS	Pre-Project_10yr_update	2995.21	36.39	47.84		47.92	0.001166	2.96	1759.40	484.50	0.17
Dry_Creek	Left Branch	2.679*	Max WS	Pre-Project_25yr	3730.42	36.39	48.26		48.36	0.001356	3.29	1965.25	486.97	0.19
Dry_Creek	Left Branch	2.679*	Max WS	Pre-Project_50yr_update	4396.45	36.39	48.58		48.69	0.001537	3.58	2119.42	488.57	0.20
Dry_Creek	Left Branch	2.679*	Max WS	Pre-Project_100yr_update	5164.96	36.39	48.90		49.03	0.001748	3.90	2274.75	490.18	0.21
Dry_Creek	Left Branch	2.679*	Max WS	Pre-Project_200yr_update	6069.52	36.39	49.23		49.38	0.002007	4.27	2436.90	495.82	0.23
Dry_Creek	Left Branch	2.679*	Max WS	Pre-Project_500yr_update	7397.51	36.39	49.65		49.84	0.002372	4.76	2648.08	501.14	0.25
Dry_Creek	Left Branch	2.679*	Max WS	Post Project_500yr	7396.63	36.39	49.65		49.84	0.002371	4.76	2648.11	501.14	0.25
Dry_Creek	Left Branch	2.679*	Max WS	Post Project_200 yr	6068.82	36.39	49.23		49.38	0.002007	4.26	2436.92	495.82	0.23
Dry_Creek	Left Branch	2.679*	Max WS	Post Project_100yr	5164.68	36.39	48.90		49.03	0.001748	3.90	2274.75	490.18	0.21
Dry_Creek	Left Branch	2.679*	Max WS	Post Project_50yr	4396.32	36.39	48.58		48.69	0.001537	3.58	2119.41	488.57	0.20
Dry_Creek	Left Branch	2.679*	Max WS	Post Project_25yr	3730.42	36.39	48.26		48.36	0.001356	3.29	1965.25	486.97	0.19
Dry_Creek	Left Branch	2.679*	Max WS	Post Project_10yr	2995.23	36.39	47.84		47.92	0.001166	2.96	1759.40	484.50	0.17
Dry_Creek	Left Branch	2.679*	Max WS	Post Project_2yr	1638.85	36.39	46.54		46.60	0.000955	2.42	1147.26	447.57	0.15
Dry_Creek	Left Branch	2.663	Max WS	Pre-Project_2yr_update	1638.76	36.85	46.41		46.52	0.001471	2.95	890.05	419.93	0.19
Dry_Creek	Left Branch	2.663	Max WS	Pre-Project_10yr_update	2929.23	36.85	47.70		47.82	0.001665	3.48	1467.32	465.78	0.20
Dry_Creek	Left Branch	2.663	Max WS	Pre-Project_25yr	3549.37	36.85	48.11		48.25	0.001807	3.73	1661.32	467.45	0.21
Dry_Creek	Left Branch	2.663	Max WS	Pre-Project_50yr_update	4108.16	36.85	48.42		48.57	0.001961	3.97	1805.03	468.68	0.22
Dry_Creek	Left Branch	2.663	Max WS	Pre-Project_100yr_update	4753.95	36.85	48.73		48.89	0.002150	4.24	1948.61	469.91	0.24
Dry_Creek	Left Branch	2.663	Max WS	Pre-Project_200yr_update	5517.07	36.85	49.04		49.23	0.002378	4.56	2097.09	471.17	0.25
Dry_Creek	Left Branch	2.663	Max WS	Pre-Project_500yr_update	6645.12	36.85	49.45		49.66	0.002722	5.00	2286.63	472.78	0.27
Dry_Creek	Left Branch	2.663	Max WS	Post Project_500yr	6643.96	36.85	49.45		49.66	0.002721	5.00	2286.70	472.78	0.27
Dry_Creek	Left Branch	2.663	Max WS	Post Project_200 yr	5516.50	36.85	49.04		49.23	0.002378	4.56	2097.12	471.17	0.25
Dry_Creek	Left Branch	2.663	Max WS	Post Project_100yr	4753.67	36.85	48.73		48.89	0.002149	4.24	1948.61	469.91	0.24
Dry_Creek	Left Branch	2.663	Max WS	Post Project_50yr	4108.03	36.85	48.42		48.57	0.001961	3.97	1805.01	468.68	0.22
Dry_Creek	Left Branch	2.663	Max WS	Post Project_25yr	3549.37	36.85	48.11		48.25	0.001807	3.73	1661.32	467.45	0.21
Dry_Creek	Left Branch	2.663	Max WS	Post Project_10yr	2929.23	36.85	47.70		47.82	0.001665	3.48	1467.32	465.78	0.20
Dry_Creek	Left Branch	2.663	Max WS	Post Project_2yr	1638.79	36.85	46.41		46.52	0.001471	2.95	890.07	419.93	0.19
Dry_Creek	Left Branch	2.654			Lat Struct									
Dry_Creek	Left Branch	2.561	Max WS	Pre-Project_2yr_update	1638.66	36.21	45.51		45.65	0.002167	3.33	779.17	374.48	0.22
Dry_Creek	Left Branch	2.561	Max WS	Pre-Project_10yr_update	2906.30	36.21	46.67		46.83	0.002514	3.96	1259.79	425.72	0.24
Dry_Creek	Left Branch	2.561	Max WS	Pre-Project_25yr	3415.88	36.21	47.03		47.21	0.002621	4.17	1416.54	431.44	0.25
Dry_Creek	Left Branch	2.561	Max WS	Pre-Project_50yr_update	3817.95	36.21	47.30		47.48	0.002702	4.32	1531.38	437.25	0.26
Dry_Creek	Left Branch	2.561	Max WS	Pre-Project_100yr_update	4237.15	36.21	47.56		47.75	0.002781	4.47	1646.37	445.34	0.26
Dry_Creek	Left Branch	2.561	Max WS	Pre-Project_200yr_update	4688.19	36.21	47.83		48.02	0.002859	4.62	1766.87	453.25	0.27
Dry_Creek	Left Branch	2.561	Max WS	Pre-Project_500yr_update	5288.20	36.21	48.18		48.38	0.002887	4.75	1928.80	456.70	0.27
Dry_Creek	Left Branch	2.561	Max WS	Post Project_500yr	5283.27	36.21	48.19		48.39	0.002873	4.74	1930.89	456.70	0.27
Dry_Creek	Left Branch	2.561	Max WS	Post Project_200 yr	4686.51	36.21	47.83		48.02	0.002854	4.61	1767.59	453.28	0.27
Dry_Creek	Left Branch	2.561	Max WS	Post Project_100yr	4236.79	36.21	47.56		47.75	0.002780	4.46	1646.57	445.35	0.26
Dry_Creek	Left Branch	2.561	Max WS	Post Project_50yr	3817.80	36.21	47.30		47.48	0.002702	4.32	1531.42	437.25	0.26
Dry_Creek	Left Branch	2.561	Max WS	Post Project_25yr	3415.85	36.21	47.03		47.21	0.002621	4.17	1416.55	431.44	0.25
Dry_Creek	Left Branch	2.561	Max WS	Post Project_10yr	2906.31	36.21	46.67		46.83	0.002514	3.96	1259.79	425.72	0.24
Dry_Creek	Left Branch	2.561	Max WS	Post Project_2yr	1638.68	36.21	45.51		45.65	0.002167	3.33	779.19	374.48	0.22
Dry_Creek	Left Branch	2.467	Max WS	Pre-Project_2yr_update	1637.64	35.93	44.10		44.33	0.003861	4.22	620.81	400.71	0.29
Dry_Creek	Left Branch	2.467	Max WS	Pre-Project_10yr_update	2906.26	35.93	45.24		45.47	0.003889	4.72	1098.41	435.95	0.30
Dry_Creek	Left Branch	2.467	Max WS	Pre-Project_25yr	3415.76	35.93	45.53		45.78	0.004134	4.99	1227.56	442.99	0.31
Dry_Creek	Left Branch	2.467	Max WS	Pre-Project_50yr_update	3817.45	35.93	45.75		46.01	0.004285	5.18	1323.48	444.60	0.32
Dry_Cre	Left Branch	2.467	Max	Pre-	4233.71	35.93	45.99		46.25	0.004329	5.31	1429.68	446.50	0.32

ek			WS	Project_100yr_update										
Dry_Cre ek	Left Branch	2.467	Max WS	Pre-Project_200yr_update	4663.03	35.93	46.27		46.53	0.004212	5.35	1555.38	448.74	0.32
Dry_Cre ek	Left Branch	2.467	Max WS	Pre-Project_500yr_update	5102.24	35.93	46.78		46.99	0.003483	5.06	1783.81	452.78	0.30
Dry_Cre ek	Left Branch	2.467	Max WS	Post Project_500yr	5097.39	35.93	46.81		47.02	0.003401	5.01	1798.02	453.03	0.29
Dry_Cre ek	Left Branch	2.467	Max WS	Post Project_200 yr	4661.47	35.93	46.29		46.54	0.004146	5.32	1564.27	448.90	0.32
Dry_Cre ek	Left Branch	2.467	Max WS	Post Project_100yr	4233.14	35.93	46.00		46.25	0.004301	5.29	1433.09	446.56	0.32
Dry_Cre ek	Left Branch	2.467	Max WS	Post Project_50yr	3817.21	35.93	45.75		46.01	0.004275	5.17	1324.56	444.62	0.32
Dry_Cre ek	Left Branch	2.467	Max WS	Post Project_25yr	3415.76	35.93	45.53		45.78	0.004132	4.99	1227.74	442.99	0.31
Dry_Cre ek	Left Branch	2.467	Max WS	Post Project_10yr	2906.25	35.93	45.24		45.47	0.003889	4.72	1098.43	435.95	0.30
Dry_Cre ek	Left Branch	2.467	Max WS	Post Project_2yr	1637.70	35.93	44.10		44.33	0.003862	4.22	620.77	400.71	0.29
Dry_Cre ek	Left Branch	2.45	Max WS	Pre-Project_2yr_update	1637.36	35.61	43.72		43.92	0.003838	3.78	599.75	462.04	0.28
Dry_Cre ek	Left Branch	2.45	Max WS	Pre-Project_10yr_update	2906.25	35.61	44.85		45.05	0.003706	4.19	1128.72	469.90	0.28
Dry_Cre ek	Left Branch	2.45	Max WS	Pre-Project_25yr	3415.61	35.61	45.11		45.33	0.003998	4.46	1251.97	471.71	0.29
Dry_Cre ek	Left Branch	2.45	Max WS	Pre-Project_50yr_update	3816.48	35.61	45.31		45.54	0.004182	4.64	1344.55	473.07	0.30
Dry_Cre ek	Left Branch	2.45	Max WS	Pre-Project_100yr_update	4227.54	35.61	45.55		45.77	0.004183	4.74	1456.27	474.70	0.30
Dry_Cre ek	Left Branch	2.45	Max WS	Pre-Project_200yr_update	4652.60	35.61	45.85		46.07	0.003954	4.73	1599.70	476.79	0.30
Dry_Cre ek	Left Branch	2.45	Max WS	Pre-Project_500yr_update	5012.87	35.61	46.46		46.63	0.002899	4.26	1891.67	481.72	0.26
Dry_Cre ek	Left Branch	2.45	Max WS	Post Project_500yr	5012.60	35.61	46.50		46.66	0.002817	4.21	1911.08	482.00	0.25
Dry_Cre ek	Left Branch	2.45	Max WS	Post Project_200 yr	4650.90	35.61	45.88		46.09	0.003861	4.69	1613.55	476.99	0.29
Dry_Cre ek	Left Branch	2.45	Max WS	Post Project_100yr	4227.69	35.61	45.56		45.78	0.004142	4.73	1461.86	474.78	0.30
Dry_Cre ek	Left Branch	2.45	Max WS	Post Project_50yr	3816.05	35.61	45.31		45.54	0.004166	4.64	1346.40	473.10	0.30
Dry_Cre ek	Left Branch	2.45	Max WS	Post Project_25yr	3415.60	35.61	45.11		45.33	0.003996	4.46	1252.28	471.72	0.29
Dry_Cre ek	Left Branch	2.45	Max WS	Post Project_10yr	2906.25	35.61	44.85		45.05	0.003706	4.19	1128.76	469.90	0.28
Dry_Cre ek	Left Branch	2.45	Max WS	Post Project_2yr	1637.38	35.61	43.72		43.92	0.003839	3.78	599.66	462.04	0.28
Dry_Cre ek	Left Branch	2.449	Max WS	Pre-Project_2yr_update	1637.32	35.61	43.71	40.24	43.92	0.003857	3.79	597.58	462.01	0.28
Dry_Cre ek	Left Branch	2.449	Max WS	Pre-Project_10yr_update	2906.24	35.61	44.85	41.69	45.05	0.003721	4.20	1126.72	469.87	0.28
Dry_Cre ek	Left Branch	2.449	Max WS	Pre-Project_25yr	3415.59	35.61	45.11	42.14	45.32	0.004015	4.47	1249.80	471.68	0.30
Dry_Cre ek	Left Branch	2.449	Max WS	Pre-Project_50yr_update	3816.24	35.61	45.31	42.49	45.53	0.004199	4.65	1342.27	473.04	0.30
Dry_Cre ek	Left Branch	2.449	Max WS	Pre-Project_100yr_update	4227.54	35.61	45.54	42.81	45.77	0.004200	4.75	1454.00	474.67	0.30
Dry_Cre ek	Left Branch	2.449	Max WS	Pre-Project_200yr_update	4652.60	35.61	45.84	44.25	46.06	0.003968	4.74	1597.57	476.76	0.30
Dry_Cre ek	Left Branch	2.449	Max WS	Pre-Project_500yr_update	5011.68	35.61	46.45	44.36	46.62	0.002904	4.26	1890.16	481.70	0.26
Dry_Cre ek	Left Branch	2.449	Max WS	Post Project_500yr	5011.22	35.61	46.49	44.36	46.66	0.002822	4.22	1909.62	481.98	0.25
Dry_Cre ek	Left Branch	2.449	Max WS	Post Project_200 yr	4650.90	35.61	45.87	44.25	46.09	0.003874	4.70	1611.48	476.96	0.29
Dry_Cre ek	Left Branch	2.449	Max WS	Post Project_100yr	4227.45	35.61	45.55	42.80	45.78	0.004158	4.73	1459.61	474.75	0.30
Dry_Cre ek	Left Branch	2.449	Max WS	Post Project_50yr	3816.05	35.61	45.31	42.49	45.53	0.004184	4.65	1344.12	473.06	0.30
Dry_Cre ek	Left Branch	2.449	Max WS	Post Project_25yr	3415.59	35.61	45.11	42.14	45.32	0.004013	4.47	1250.10	471.69	0.29
Dry_Cre ek	Left Branch	2.449	Max WS	Post Project_10yr	2906.25	35.61	44.85	41.69	45.05	0.003721	4.20	1126.76	469.87	0.28
Dry_Cre ek	Left Branch	2.449	Max WS	Post Project_2yr	1637.38	35.61	43.71	40.24	43.92	0.003858	3.79	597.49	462.01	0.28
Dry_Cre ek	Left Branch	2.448			Bridge									
Dry_Cre ek	Left Branch	2.445	Max WS	Pre-Project_2yr_update	1637.32	35.86	43.67		43.80	0.002531	3.25	825.39	467.82	0.23
Dry_Cre ek	Left Branch	2.445	Max WS	Pre-Project_10yr_update	2906.24	35.86	44.81		44.94	0.002472	3.61	1364.34	477.71	0.24
Dry_Cre ek	Left Branch	2.445	Max WS	Pre-Project_25yr	3415.61	35.86	45.06		45.21	0.002730	3.88	1485.17	479.90	0.25
Dry_Cre ek	Left Branch	2.445	Max WS	Pre-Project_50yr_update	3816.07	35.86	45.26		45.41	0.002893	4.06	1577.89	481.57	0.26
Dry_Cre ek	Left Branch	2.445	Max WS	Pre-Project_100yr_update	4225.50	35.86	45.49		45.65	0.002939	4.17	1689.75	483.58	0.26
Dry_Cre ek	Left Branch	2.445	Max WS	Pre-Project_200yr_update	4649.30	35.86	45.79		45.95	0.002819	4.19	1836.53	486.21	0.26
Dry_Cre ek	Left Branch	2.445	Max WS	Pre-Project_500yr_update	5003.56	35.86	46.42		46.54	0.002103	3.80	2142.38	492.55	0.23
Dry_Cre ek	Left Branch	2.445	Max WS	Post Project_500yr	4998.77	35.86	46.46		46.58	0.002043	3.76	2162.60	492.92	0.22

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Dry_Cre ek	Left Branch	2.445	Max WS	Post Project_200 yr	4646.77	35.86	45.82		45.97	0.002753	4.15	1851.33	486.48	0.26
Dry_Cre ek	Left Branch	2.445	Max WS	Post Project_100yr	4225.79	35.86	45.50		45.66	0.002911	4.16	1695.74	483.69	0.26
Dry_Cre ek	Left Branch	2.445	Max WS	Post Project_50yr	3815.75	35.86	45.26		45.41	0.002883	4.05	1579.82	481.60	0.26
Dry_Cre ek	Left Branch	2.445	Max WS	Post Project_25yr	3415.63	35.86	45.06		45.21	0.002728	3.88	1485.50	479.90	0.25
Dry_Cre ek	Left Branch	2.445	Max WS	Post Project_10yr	2906.25	35.86	44.81		44.94	0.002472	3.61	1364.38	477.71	0.24
Dry_Cre ek	Left Branch	2.445	Max WS	Post Project_2yr	1637.31	35.86	43.67		43.80	0.002531	3.25	825.30	467.82	0.23
Dry_Cre ek	Left Branch	2.444	Max WS	Pre-Project_2yr_update	1637.32	35.86	43.67		43.80	0.002539	3.26	824.08	467.80	0.23
Dry_Cre ek	Left Branch	2.444	Max WS	Pre-Project_10yr_update	2906.24	35.86	44.81		44.94	0.002478	3.61	1363.07	477.69	0.24
Dry_Cre ek	Left Branch	2.444	Max WS	Pre-Project_25yr	3415.61	35.86	45.06		45.20	0.002737	3.88	1483.75	479.87	0.25
Dry_Cre ek	Left Branch	2.444	Max WS	Pre-Project_50yr_update	3816.12	35.86	45.25		45.41	0.002901	4.06	1576.38	481.54	0.26
Dry_Cre ek	Left Branch	2.444	Max WS	Pre-Project_100yr_update	4225.42	35.86	45.49		45.64	0.002947	4.18	1688.21	483.55	0.26
Dry_Cre ek	Left Branch	2.444	Max WS	Pre-Project_200yr_update	4649.48	35.86	45.79		45.94	0.002826	4.20	1835.05	486.18	0.26
Dry_Cre ek	Left Branch	2.444	Max WS	Pre-Project_500yr_update	5003.73	35.86	46.41		46.54	0.002106	3.80	2141.29	492.53	0.23
Dry_Cre ek	Left Branch	2.444	Max WS	Post Project_500yr	4998.77	35.86	46.45		46.58	0.002046	3.76	2161.54	492.90	0.22
Dry_Cre ek	Left Branch	2.444	Max WS	Post Project_200 yr	4646.77	35.86	45.82		45.97	0.002759	4.16	1849.89	486.45	0.26
Dry_Cre ek	Left Branch	2.444	Max WS	Post Project_100yr	4225.79	35.86	45.50		45.66	0.002918	4.16	1694.21	483.66	0.26
Dry_Cre ek	Left Branch	2.444	Max WS	Post Project_50yr	3815.82	35.86	45.26		45.41	0.002891	4.06	1578.31	481.58	0.26
Dry_Cre	Left Branch	2.444	Max	Post Project_25yr	3415.62	35.86	45.06		45.20	0.002735	3.88	1484.08	479.88	0.25

ek			WS											
Dry_Creek	Left Branch	2.444	Max WS	Post Project_10yr	2906.25	35.86	44.81		44.94	0.002478	3.61	1363.11	477.69	0.24
Dry_Creek	Left Branch	2.444	Max WS	Post Project_2yr	1637.28	35.86	43.67		43.80	0.002539	3.26	823.98	467.80	0.23
Dry_Creek	Left Branch	2.442			Lat Struct									
Dry_Creek	Left Branch	2.427			Lat Struct									
Dry_Creek	Left Branch	2.421	Max WS	Pre-Project_2yr_update	1637.14	33.38	43.42		43.59	0.002085	3.40	697.18	483.16	0.22
Dry_Creek	Left Branch	2.421	Max WS	Pre-Project_10yr_update	2895.53	33.38	44.57		44.75	0.002405	3.98	1286.68	536.04	0.24
Dry_Creek	Left Branch	2.421	Max WS	Pre-Project_25yr	3386.25	33.38	44.80		45.00	0.002711	4.30	1408.50	539.65	0.26
Dry_Creek	Left Branch	2.421	Max WS	Pre-Project_50yr_update	3761.11	33.38	44.98		45.19	0.002881	4.50	1505.89	542.51	0.27
Dry_Creek	Left Branch	2.421	Max WS	Pre-Project_100yr_update	4124.65	33.38	45.22		45.43	0.002862	4.57	1635.54	546.30	0.27
Dry_Creek	Left Branch	2.421	Max WS	Pre-Project_200yr_update	4449.63	33.38	45.55		45.74	0.002575	4.44	1819.77	551.79	0.26
Dry_Creek	Left Branch	2.421	Max WS	Pre-Project_500yr_update	4495.27	33.38	46.29		46.41	0.001619	3.70	2230.40	582.86	0.21
Dry_Creek	Left Branch	2.421	Max WS	Post Project_500yr	4471.39	33.38	46.33		46.45	0.001551	3.63	2257.80	582.98	0.20
Dry_Creek	Left Branch	2.421	Max WS	Post Project_200 yr	4437.26	33.38	45.59		45.78	0.002486	4.37	1841.55	552.51	0.25
Dry_Creek	Left Branch	2.421	Max WS	Post Project_100yr	4121.44	33.38	45.23		45.44	0.002821	4.54	1644.51	546.56	0.27
Dry_Creek	Left Branch	2.421	Max WS	Post Project_50yr	3760.58	33.38	44.98		45.19	0.002867	4.49	1508.83	542.60	0.27
Dry_Creek	Left Branch	2.421	Max WS	Post Project_25yr	3386.12	33.38	44.80		45.00	0.002709	4.30	1408.98	539.66	0.26
Dry_Creek	Left Branch	2.421	Max WS	Post Project_10yr	2895.53	33.38	44.57		44.75	0.002405	3.98	1286.73	536.04	0.24
Dry_Creek	Left Branch	2.421	Max WS	Post Project_2yr	1637.18	33.38	43.42		43.59	0.002085	3.40	697.05	483.15	0.22
Dry_Creek	Left Branch	2.357	Max WS	Pre-Project_2yr_update	1636.65	34.22	42.26		42.56	0.004022	4.36	375.76	594.52	0.31
Dry_Creek	Left Branch	2.357	Max WS	Pre-Project_10yr_update	2679.94	34.22	43.64		43.84	0.002931	4.21	1270.33	791.60	0.27
Dry_Creek	Left Branch	2.357	Max WS	Pre-Project_25yr	2906.85	34.22	43.94		44.10	0.002465	3.96	1510.59	794.07	0.25
Dry_Creek	Left Branch	2.357	Max WS	Pre-Project_50yr_update	2991.11	34.22	44.23		44.35	0.001934	3.59	1736.56	796.94	0.22
Dry_Creek	Left Branch	2.357	Max WS	Pre-Project_100yr_update	2881.46	34.22	44.64		44.71	0.001200	2.92	2065.17	807.52	0.18
Dry_Creek	Left Branch	2.357	Max WS	Pre-Project_200yr_update	2610.68	34.22	45.14		45.18	0.000632	2.20	2475.61	819.19	0.13
Dry_Creek	Left Branch	2.357	Max WS	Pre-Project_500yr_update	2517.90	34.22	46.06		46.08	0.000284	1.57	3230.91	821.57	0.09
Dry_Creek	Left Branch	2.357	Max WS	Post Project_500yr	2511.53	34.22	46.11		46.13	0.000271	1.55	3276.33	821.71	0.09
Dry_Creek	Left Branch	2.357	Max WS	Post Project_200 yr	2563.79	34.22	45.20		45.24	0.000578	2.12	2526.02	819.35	0.12
Dry_Creek	Left Branch	2.357	Max WS	Post Project_100yr	2839.46	34.22	44.67		44.74	0.001125	2.84	2095.81	808.92	0.17
Dry_Creek	Left Branch	2.357	Max WS	Post Project_50yr	2974.13	34.22	44.25		44.37	0.001871	3.54	1753.25	797.29	0.22
Dry_Creek	Left Branch	2.357	Max WS	Post Project_25yr	2903.45	34.22	43.95		44.11	0.002442	3.95	1515.75	794.12	0.25
Dry_Creek	Left Branch	2.357	Max WS	Post Project_10yr	2678.24	34.22	43.64		43.84	0.002923	4.21	1271.44	791.76	0.27
Dry_Creek	Left Branch	2.357	Max WS	Post Project_2yr	1636.67	34.22	42.26		42.56	0.004023	4.36	375.73	594.42	0.31
Dry_Creek	Left Branch	2.266	Max WS	Pre-Project_2yr_update	1636.19	33.02	40.84		41.02	0.002343	3.42	478.94	848.13	0.25
Dry_Creek	Left Branch	2.266	Max WS	Pre-Project_10yr_update	2671.09	33.02	42.17		42.48	0.003226	4.48	657.14	1395.72	0.30
Dry_Creek	Left Branch	2.266	Max WS	Pre-Project_25yr	2845.70	33.02	42.87		43.09	0.002216	3.96	1037.21	1473.00	0.25
Dry_Creek	Left Branch	2.266	Max WS	Pre-Project_50yr_update	2763.85	33.02	43.54		43.67	0.001243	3.14	1411.24	1473.00	0.19
Dry_Creek	Left Branch	2.266	Max WS	Pre-Project_100yr_update	2498.12	33.02	44.27		44.33	0.000598	2.30	1815.13	1473.00	0.14
Dry_Creek	Left Branch	2.266	Max WS	Pre-Project_200yr_update	2402.90	33.02	44.93		44.97	0.000355	1.86	2185.33	1473.00	0.11
Dry_Creek	Left Branch	2.266	Max WS	Pre-Project_500yr_update	2570.92	33.02	45.95		45.97	0.000223	1.58	2750.30	1473.00	0.09
Dry_Creek	Left Branch	2.266	Max WS	Post Project_500yr	2559.34	33.02	46.01		46.03	0.000214	1.55	2783.82	1473.00	0.08
Dry_Creek	Left Branch	2.266	Max WS	Post Project_200 yr	2370.38	33.02	45.01		45.04	0.000329	1.80	2228.77	1473.00	0.10
Dry_Creek	Left Branch	2.266	Max WS	Post Project_100yr	2450.93	33.02	44.33		44.39	0.000551	2.22	1850.87	1473.00	0.13
Dry_Creek	Left Branch	2.266	Max WS	Post Project_50yr	2731.78	33.02	43.60		43.71	0.001165	3.05	1441.64	1473.00	0.19
Dry_Creek	Left Branch	2.266	Max WS	Post Project_25yr	2838.37	33.02	42.90		43.12	0.002156	3.91	1053.31	1473.00	0.25
Dry_Creek	Left Branch	2.266	Max WS	Post Project_10yr	2668.14	33.02	42.18		42.49	0.003199	4.47	662.03	1396.18	0.30
Dry_Creek	Left Branch	2.266	Max WS	Post Project_2yr	1636.11	33.02	40.84		41.02	0.002344	3.42	478.85	847.91	0.25
Dry_Creek	Left Branch	2.26			Lat Struct									
Dry_Creek	Left Branch	2.181	Max WS	Pre-Project_2yr_update	739.86	31.48	40.25		40.39	0.001975	2.97	249.02	1042.72	0.22
Dry_Creek	Left Branch	2.181	Max WS	Pre-Project_10yr_update	865.60	31.48	41.76		41.86	0.001382	2.60	439.30	1311.07	0.19
Dry_Creek	Left Branch	2.181	Max WS	Pre-Project_25yr	761.49	31.48	42.60		42.63	0.000448	1.55	886.12	1339.00	0.11
Dry_Creek	Left Branch	2.181	Max WS	Pre-Project_50yr_update	575.03	31.48	43.41		43.42	0.000107	0.82	1319.54	1339.00	0.05
Dry_Creek	Left Branch	2.181	Max WS	Pre-Project_100yr_update	383.34	31.48	44.21		44.21	0.000023	0.41	1749.84	1339.00	0.03
Dry_Creek	Left Branch	2.181	Max WS	Pre-Project_200yr_update	283.36	31.48	44.90		44.90	0.000007	0.24	2121.73	1339.00	0.01
Dry_Creek	Left Branch	2.181	Max WS	Pre-Project_500yr_update	469.56	31.48	45.93		45.93	0.000010	0.31	2674.15	1339.00	0.02
Dry_Creek	Left Branch	2.181	Max WS	Post Project_500yr	524.24	31.48	45.99		45.99	0.000012	0.34	2706.60	1339.00	0.02
Dry_Creek	Left Branch	2.181	Max WS	Post Project_200 yr	357.95	31.48	44.98		44.98	0.000011	0.30	2164.34	1339.00	0.02
Dry_Creek	Left Branch	2.181	Max WS	Post Project_100yr	412.44	31.48	44.28		44.28	0.000025	0.43	1786.24	1339.00	0.03
Dry_Creek	Left Branch	2.181	Max WS	Post Project_50yr	582.66	31.48	43.47		43.48	0.000103	0.81	1352.46	1339.00	0.05
Dry_Creek	Left Branch	2.181	Max WS	Post Project_25yr	761.05	31.48	42.64		42.67	0.000429	1.52	905.01	1339.00	0.11
Dry_Creek	Left Branch	2.181	Max WS	Post Project_10yr	863.83	31.48	41.77		41.87	0.001364	2.58	445.28	1311.74	0.19
Dry_Creek	Left Branch	2.181	Max WS	Post Project_2yr	741.80	31.48	40.24		40.38	0.001991	2.98	248.78	1042.64	0.22
Dry_Creek	Left Branch	2.072	Max WS	Pre-Project_2yr_update	539.17	31.49	39.38		39.47	0.001429	2.36	228.05	735.40	0.19
Dry_Creek	Left Branch	2.072	Max WS	Pre-Project_10yr_update	490.34	31.49	41.42		41.45	0.000353	1.41	492.99	1203.00	0.10
Dry_Creek	Left Branch	2.072	Max WS	Pre-Project_25yr	565.66	31.49	42.48		42.50	0.000165	1.06	965.77	1203.00	0.07
Dry_Creek	Left Branch	2.072	Max WS	Pre-Project_50yr_update	915.74	31.49	43.33		43.35	0.000203	1.27	1343.73	1203.00	0.08

Dry_Creek	Left Branch	2.072	Max WS	Pre-Project_100yr_update	1276.52	31.49	44.14		44.16	0.000212	1.38	1703.69	1203.00	0.08
Dry_Creek	Left Branch	2.072	Max WS	Pre-Project_200yr_update	1569.34	31.49	44.84		44.85	0.000201	1.41	2013.22	1203.00	0.08
Dry_Creek	Left Branch	2.072	Max WS	Pre-Project_500yr_update	1924.37	31.49	45.87		45.89	0.000166	1.36	2474.12	1203.00	0.07
Dry_Creek	Left Branch	2.072	Max WS	Post Project_500yr	1954.98	31.49	45.93		45.95	0.000166	1.37	2500.80	1203.00	0.07
Dry_Creek	Left Branch	2.072	Max WS	Post Project_200 yr	1620.01	31.49	44.91		44.93	0.000204	1.43	2047.78	1203.00	0.08
Dry_Creek	Left Branch	2.072	Max WS	Post Project_100yr	1313.40	31.49	44.21		44.22	0.000214	1.39	1733.36	1203.00	0.08
Dry_Creek	Left Branch	2.072	Max WS	Post Project_50yr	947.12	31.49	43.39		43.41	0.000206	1.28	1370.75	1203.00	0.08
Dry_Creek	Left Branch	2.072	Max WS	Post Project_25yr	582.41	31.49	42.52		42.53	0.000168	1.08	982.25	1203.00	0.07
Dry_Creek	Left Branch	2.072	Max WS	Post Project_10yr	494.96	31.49	41.43		41.46	0.000355	1.42	499.21	1203.00	0.10
Dry_Creek	Left Branch	2.072	Max WS	Post Project_2yr	549.14	31.49	39.35		39.45	0.001507	2.42	226.74	731.72	0.19
Dry_Creek	Left Branch	1.954	Max WS	Pre-Project_2yr_update	277.68	31.05	39.01		39.02	0.000177	0.94	294.94	160.85	0.07
Dry_Creek	Left Branch	1.954	Max WS	Pre-Project_10yr_update	15.22	31.05	41.36		41.36	0.000000	0.03	625.65	1085.00	0.00
Dry_Creek	Left Branch	1.954	Max WS	Pre-Project_25yr	-109.72	31.05	42.45		42.46	0.000004	-0.18	956.13	1085.00	0.01
Dry_Creek	Left Branch	1.954	Max WS	Pre-Project_50yr_update	-82.45	31.05	43.30		43.30	0.000001	-0.11	1210.54	1085.00	0.01

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Dry_Creek	Left Branch	1.954	Max WS	Pre-Project_100yr_update	18.29	31.05	44.11		44.11	0.000000	0.02	1454.52	1085.00	0.00
Dry_Creek	Left Branch	1.954	Max WS	Pre-Project_200yr_update	139.75	31.05	44.81		44.81	0.000002	0.14	1665.08	1085.00	0.01
Dry_Creek	Left Branch	1.954	Max WS	Pre-Project_500yr_update	500.97	31.05	45.85		45.85	0.000013	0.41	1978.02	1085.00	0.02
Dry_Creek	Left Branch	1.954	Max WS	Post Project_500yr	565.03	31.05	45.91		45.91	0.000016	0.46	1995.76	1085.00	0.02
Dry_Creek	Left Branch	1.954	Max WS	Post Project_200 yr	202.84	31.05	44.89		44.89	0.000003	0.20	1688.25	1085.00	0.01
Dry_Creek	Left Branch	1.954	Max WS	Post Project_100yr	60.05	31.05	44.18		44.18	0.000000	0.07	1474.56	1085.00	0.00
Dry_Creek	Left Branch	1.954	Max WS	Post Project_50yr	-48.25	31.05	43.36		43.36	0.000000	-0.06	1228.70	1085.00	0.00
Dry_Creek	Left Branch	1.954	Max WS	Post Project_25yr	-96.32	31.05	42.49		42.49	0.000003	-0.16	967.06	1085.00	0.01
Dry_Creek	Left Branch	1.954	Max WS	Post Project_10yr	18.36	31.05	41.37		41.37	0.000000	0.04	629.77	1085.00	0.00
Dry_Creek	Left Branch	1.954	Max WS	Post Project_2yr	278.73	31.05	38.95		38.97	0.000183	0.95	292.51	143.74	0.07
Dry_Creek	Left Branch	1.857	Max WS	Pre-Project_2yr_update	276.47	30.31	38.91		38.93	0.000188	0.95	292.22	1138.95	0.07
Dry_Creek	Left Branch	1.857	Max WS	Pre-Project_10yr_update	787.30	30.31	41.21		41.25	0.000369	1.65	722.02	1178.42	0.10
Dry_Creek	Left Branch	1.857	Max WS	Pre-Project_25yr	1069.52	30.31	42.34		42.37	0.000300	1.63	1098.89	1195.00	0.10
Dry_Creek	Left Branch	1.857	Max WS	Pre-Project_50yr_update	1332.35	30.31	43.20		43.23	0.000267	1.63	1385.48	1195.00	0.09
Dry_Creek	Left Branch	1.857	Max WS	Pre-Project_100yr_update	1628.08	30.31	44.01		44.04	0.000248	1.65	1658.38	1195.00	0.09
Dry_Creek	Left Branch	1.857	Max WS	Pre-Project_200yr_update	1925.78	30.31	44.71		44.74	0.000241	1.70	1892.74	1195.00	0.09
Dry_Creek	Left Branch	1.857	Max WS	Pre-Project_500yr_update	2062.39	30.31	45.78		45.80	0.000168	1.51	2249.40	1195.00	0.08
Dry_Creek	Left Branch	1.857	Max WS	Post Project_500yr	2119.68	30.31	45.83		45.86	0.000173	1.53	2268.30	1195.00	0.08
Dry_Creek	Left Branch	1.857	Max WS	Post Project_200 yr	1980.33	30.31	44.79		44.82	0.000246	1.72	1917.77	1195.00	0.09
Dry_Creek	Left Branch	1.857	Max WS	Post Project_100yr	1675.11	30.31	44.08		44.11	0.000254	1.68	1679.89	1195.00	0.09
Dry_Creek	Left Branch	1.857	Max WS	Post Project_50yr	1359.15	30.31	43.26		43.29	0.000268	1.64	1405.44	1195.00	0.09
Dry_Creek	Left Branch	1.857	Max WS	Post Project_25yr	1083.70	30.31	42.38		42.41	0.000301	1.63	1110.88	1195.00	0.10
Dry_Creek	Left Branch	1.857	Max WS	Post Project_10yr	793.37	30.31	41.23		41.26	0.000371	1.66	726.11	1178.58	0.10
Dry_Creek	Left Branch	1.857	Max WS	Post Project_2yr	264.04	30.31	38.87		38.88	0.000176	0.91	289.86	1131.24	0.07
Dry_Creek	Left Branch	1.833	Max WS	Pre-Project_2yr_update	767.72	30.56	38.75		38.80	0.000760	1.81	425.16	258.46	0.14
Dry_Creek	Left Branch	1.833	Max WS	Pre-Project_10yr_update	1818.55	30.56	40.91		41.04	0.001446	2.92	632.31	1004.24	0.20
Dry_Creek	Left Branch	1.833	Max WS	Pre-Project_25yr	2508.01	30.56	41.99		42.17	0.001720	3.38	800.58	1062.80	0.22
Dry_Creek	Left Branch	1.833	Max WS	Pre-Project_50yr_update	3105.90	30.56	42.83		43.02	0.001916	3.63	978.96	1123.22	0.24
Dry_Creek	Left Branch	1.833	Max WS	Pre-Project_100yr_update	3607.05	30.56	43.68		43.87	0.001632	3.60	1250.25	1219.00	0.22
Dry_Creek	Left Branch	1.833	Max WS	Pre-Project_200yr_update	3941.15	30.56	44.44		44.60	0.001297	3.41	1508.43	1219.00	0.20
Dry_Creek	Left Branch	1.833	Max WS	Pre-Project_500yr_update	3549.98	30.56	45.65		45.73	0.000582	2.49	1922.39	1219.00	0.14
Dry_Creek	Left Branch	1.833	Max WS	Post Project_500yr	3624.30	30.56	45.70		45.78	0.000592	2.52	1940.90	1219.00	0.14
Dry_Creek	Left Branch	1.833	Max WS	Post Project_200 yr	3984.58	30.56	44.52		44.68	0.001272	3.40	1535.90	1219.00	0.20
Dry_Creek	Left Branch	1.833	Max WS	Post Project_100yr	3677.77	30.56	43.75		43.93	0.001639	3.63	1271.50	1219.00	0.22
Dry_Creek	Left Branch	1.833	Max WS	Post Project_50yr	3143.33	30.56	42.89		43.08	0.001901	3.63	994.82	1139.62	0.24
Dry_Creek	Left Branch	1.833	Max WS	Post Project_25yr	2529.98	30.56	42.03		42.20	0.001728	3.39	807.19	1065.14	0.22
Dry_Creek	Left Branch	1.833	Max WS	Post Project_10yr	1826.21	30.56	40.93		41.06	0.001450	2.93	633.91	1004.86	0.20
Dry_Creek	Left Branch	1.833	Max WS	Post Project_2yr	757.07	30.56	38.71		38.76	0.000758	1.80	421.28	251.99	0.14
Dry_Creek	Left Branch	1.832	Max WS	Pre-Project_2yr_update	767.72	30.56	38.75		38.80	0.000760	1.81	425.09	84.71	0.14
Dry_Creek	Left Branch	1.832	Max WS	Pre-Project_10yr_update	1818.57	30.56	40.91		41.04	0.001447	2.92	632.11	129.17	0.20
Dry_Creek	Left Branch	1.832	Max WS	Pre-Project_25yr	2508.11	30.56	41.99		42.17	0.001721	3.38	800.24	187.68	0.22
Dry_Creek	Left Branch	1.832	Max WS	Pre-Project_50yr_update	3105.68	30.56	42.82		43.02	0.001918	3.63	978.45	247.68	0.24
Dry_Creek	Left Branch	1.832	Max WS	Pre-Project_100yr_update	3606.71	30.56	43.68		43.87	0.001634	3.60	1249.65	344.00	0.22
Dry_Creek	Left Branch	1.832	Max WS	Pre-Project_200yr_update	3940.80	30.56	44.44		44.60	0.001298	3.41	1507.95	344.00	0.20
Dry_Creek	Left Branch	1.832	Max WS	Pre-Project_500yr_update	3549.09	30.56	45.65		45.73	0.000582	2.49	1922.19	344.00	0.14
Dry_Creek	Left Branch	1.832	Max WS	Post Project_500yr	3624.30	30.56	45.70		45.78	0.000592	2.52	1940.69	344.00	0.14
Dry_Creek	Left Branch	1.832	Max WS	Post Project_200 yr	3984.58	30.56	44.52		44.68	0.001273	3.40	1535.44	344.00	0.20
Dry_Creek	Left Branch	1.832	Max WS	Post Project_100yr	3677.40	30.56	43.74		43.93	0.001641	3.63	1270.90	344.00	0.22
Dry_Creek	Left Branch	1.832	Max WS	Post Project_50yr	3143.11	30.56	42.89		43.08	0.001902	3.63	994.28	264.08	0.24
Dry_Creek	Left Branch	1.832	Max WS	Post Project_25yr	2530.03	30.56	42.03		42.20	0.001729	3.39	806.84	190.02	0.23
Dry_Creek	Left Branch	1.832	Max WS	Post Project_10yr	1826.19	30.56	40.92		41.06	0.001451	2.93	633.72	129.78	0.20

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Dry_Creek	Left Branch	1.832	Max WS	Post Project_2yr	757.07	30.56	38.71		38.76	0.000759	1.80	421.22	84.44	0.14
Dry_Creek	Left Branch	1.829			Mult Open									
Dry_Creek	Left Branch	1.824	Max WS	Pre-Project_2yr_update	767.71	31.52	38.55		38.63	0.001519	2.30	333.66	76.16	0.19
Dry_Creek	Left Branch	1.824	Max WS	Pre-Project_10yr_update	1818.47	31.52	40.58		40.79	0.002692	3.62	501.84	718.22	0.27
Dry_Creek	Left Branch	1.824	Max WS	Pre-Project_25yr	2506.76	31.52	41.49		41.78	0.003315	4.28	586.63	982.26	0.30
Dry_Creek	Left Branch	1.824	Max WS	Pre-Project_50yr_update	3099.88	31.52	42.17		42.52	0.003819	4.74	670.06	1018.93	0.33
Dry_Creek	Left Branch	1.824	Max WS	Pre-Project_100yr_update	3563.64	31.52	42.81		43.17	0.004356	4.88	775.63	1068.49	0.35
Dry_Creek	Left Branch	1.824	Max WS	Pre-Project_200yr_update	3781.83	31.52	43.85		44.12	0.002808	4.23	1049.05	1209.64	0.29
Dry_Creek	Left Branch	1.824	Max WS	Pre-Project_500yr_update	3475.92	31.52	45.43		45.54	0.000953	2.83	1602.75	1231.00	0.17
Dry_Creek	Left Branch	1.824	Max WS	Post Project_500yr	3549.73	31.52	45.48		45.59	0.000966	2.86	1620.95	1231.00	0.17
Dry_Creek	Left Branch	1.824	Max WS	Post Project_200 yr	3851.07	31.52	43.93		44.20	0.002779	4.24	1075.68	1218.78	0.28
Dry_Creek	Left Branch	1.824	Max WS	Post Project_100yr	3640.52	31.52	42.87		43.24	0.004431	4.92	787.40	1075.72	0.35
Dry_Creek	Left Branch	1.824	Max WS	Post Project_50yr	3139.33	31.52	42.21		42.56	0.003879	4.77	675.47	1021.49	0.33
Dry_Creek	Left Branch	1.824	Max WS	Post Project_25yr	2528.79	31.52	41.52		41.81	0.003331	4.30	589.52	983.65	0.30
Dry_Creek	Left Branch	1.824	Max WS	Post Project_10yr	1825.98	31.52	40.59		40.80	0.002699	3.63	502.83	720.91	0.27
Dry_Creek	Left Branch	1.824	Max WS	Post Project_2yr	757.06	31.52	38.50		38.58	0.001524	2.29	329.96	75.82	0.19
Dry_Creek	Left Branch	1.823	Max WS	Pre-Project_2yr_update	767.71	31.52	38.55		38.63	0.001520	2.30	333.54	76.15	0.19
Dry_Creek	Left Branch	1.823	Max WS	Pre-Project_10yr_update	1818.44	31.52	40.58		40.78	0.002695	3.63	501.58	717.51	0.27
Dry_Creek	Left Branch	1.823	Max WS	Pre-Project_25yr	2506.84	31.52	41.49		41.77	0.003321	4.28	586.25	982.07	0.30
Dry_Creek	Left Branch	1.823	Max WS	Pre-Project_50yr_update	3099.69	31.52	42.16		42.51	0.003823	4.75	669.45	1018.64	0.33
Dry_Creek	Left Branch	1.823	Max WS	Pre-Project_100yr_update	3563.43	31.52	42.80		43.17	0.004364	4.88	774.66	1067.88	0.35
Dry_Creek	Left Branch	1.823	Max WS	Pre-Project_200yr_update	3781.49	31.52	43.85		44.12	0.002813	4.23	1048.01	1209.28	0.29
Dry_Creek	Left Branch	1.823	Max WS	Pre-Project_500yr_update	3476.10	31.52	45.43		45.54	0.000953	2.83	1602.40	1231.00	0.17
Dry_Creek	Left Branch	1.823	Max WS	Post Project_500yr	3549.73	31.52	45.48		45.59	0.000967	2.86	1620.60	1231.00	0.17
Dry_Creek	Left Branch	1.823	Max WS	Post Project_200 yr	3849.98	31.52	43.93		44.20	0.002782	4.24	1074.62	1218.42	0.28
Dry_Creek	Left Branch	1.823	Max WS	Post Project_100yr	3640.52	31.52	42.86		43.24	0.004441	4.93	786.38	1075.10	0.35
Dry_Creek	Left Branch	1.823	Max WS	Post Project_50yr	3138.82	31.52	42.20		42.55	0.003883	4.78	674.83	1021.19	0.33
Dry_Creek	Left Branch	1.823	Max WS	Post Project_25yr	2528.87	31.52	41.51		41.80	0.003337	4.30	589.13	983.46	0.30
Dry_Creek	Left Branch	1.823	Max WS	Post Project_10yr	1826.02	31.52	40.59		40.80	0.002703	3.63	502.57	720.20	0.27
Dry_Creek	Left Branch	1.823	Max WS	Post Project_2yr	757.07	31.52	38.50		38.58	0.001525	2.30	329.84	75.81	0.19
Dry_Creek	Left Branch	1.821			Lat Struct									
Dry_Creek	Left Branch	1.8	Max WS	Pre-Project_2yr_update	767.71	30.85	38.33		38.45	0.001744	2.76	281.70	521.40	0.21
Dry_Creek	Left Branch	1.8	Max WS	Pre-Project_10yr_update	1818.43	30.85	40.33		40.49	0.002805	3.66	714.20	1129.98	0.27
Dry_Creek	Left Branch	1.8	Max WS	Pre-Project_25yr	2506.29	30.85	41.29		41.45	0.002637	3.69	972.98	1141.52	0.26
Dry_Creek	Left Branch	1.8	Max WS	Pre-Project_50yr_update	3091.87	30.85	42.01		42.16	0.002450	3.72	1173.12	1152.34	0.26
Dry_Creek	Left Branch	1.8	Max WS	Pre-Project_100yr_update	3452.22	30.85	42.68		42.82	0.001955	3.55	1370.81	1181.49	0.23
Dry_Creek	Left Branch	1.8	Max WS	Pre-Project_200yr_update	3943.33	30.85	43.75		43.86	0.001365	3.25	1708.24	1185.00	0.20
Dry_Creek	Left Branch	1.8	Max WS	Pre-Project_500yr_update	4451.63	30.85	45.32		45.40	0.000809	2.81	2204.69	1185.00	0.16
Dry_Creek	Left Branch	1.8	Max WS	Post Project_500yr	4546.68	30.85	45.37		45.45	0.000826	2.85	2220.10	1185.00	0.16
Dry_Creek	Left Branch	1.8	Max WS	Post Project_200 yr	4037.18	30.85	43.82		43.93	0.001376	3.28	1731.31	1185.00	0.20
Dry_Creek	Left Branch	1.8	Max WS	Post Project_100yr	3523.25	30.85	42.74		42.88	0.001962	3.57	1389.68	1185.00	0.23
Dry_Creek	Left Branch	1.8	Max WS	Post Project_50yr	3130.86	30.85	42.05		42.20	0.002445	3.73	1184.16	1152.64	0.26
Dry_Creek	Left Branch	1.8	Max WS	Post Project_25yr	2528.30	30.85	41.32		41.48	0.002630	3.69	980.96	1142.05	0.26
Dry_Creek	Left Branch	1.8	Max WS	Post Project_10yr	1825.91	30.85	40.34		40.51	0.002802	3.66	717.31	1130.12	0.27
Dry_Creek	Left Branch	1.8	Max WS	Post Project_2yr	757.03	30.85	38.28		38.40	0.001744	2.74	277.18	477.61	0.21
Dry_Creek	Left Branch	1.749	Max WS	Pre-Project_2yr_update	767.59	31.49	37.80		37.92	0.002102	2.75	279.67	66.53	0.23
Dry_Creek	Left Branch	1.749	Max WS	Pre-Project_10yr_update	1836.14	31.49	39.24		39.57	0.004617	4.73	462.12	911.83	0.34
Dry_Creek	Left Branch	1.749	Max WS	Pre-Project_25yr	2628.01	31.49	40.06		40.47	0.005407	5.48	624.87	1044.22	0.38
Dry_Creek	Left Branch	1.749	Max WS	Pre-Project_50yr_update	3203.06	31.49	40.80		41.21	0.005110	5.63	785.20	1080.12	0.37
Dry_Creek	Left Branch	1.749	Max WS	Pre-Project_100yr_update	3606.31	31.49	41.80		42.10	0.003372	4.98	1028.52	1087.20	0.31
Dry_Creek	Left Branch	1.749	Max WS	Pre-Project_200yr_update	4538.71	31.49	43.03		43.30	0.002674	4.87	1328.01	1087.20	0.28
Dry_Creek	Left Branch	1.749	Max WS	Pre-Project_500yr_update	5992.34	31.49	44.73		44.98	0.002126	4.85	1740.46	1087.20	0.26
Dry_Creek	Left Branch	1.749	Max WS	Post Project_500yr	6145.03	31.49	44.75		45.02	0.002210	4.96	1747.15	1087.20	0.26
Dry_Creek	Left Branch	1.749	Max WS	Post Project_200 yr	4664.68	31.49	43.06		43.34	0.002777	4.98	1336.06	1087.20	0.29
Dry_Creek	Left Branch	1.749	Max WS	Post Project_100yr	3681.37	31.49	41.83		42.13	0.003453	5.05	1035.42	1087.20	0.31
Dry_Creek	Left Branch	1.749	Max WS	Post Project_50yr	3255.06	31.49	40.83		41.25	0.005180	5.68	792.42	1083.13	0.37
Dry_Creek	Left Branch	1.749	Max WS	Post Project_25yr	2655.75	31.49	40.08		40.50	0.005432	5.50	629.92	1044.58	0.38
Dry_Creek	Left Branch	1.749	Max WS	Post Project_10yr	1844.55	31.49	39.25		39.58	0.004626	4.74	464.03	913.96	0.35
Dry_Creek	Left Branch	1.749	Max WS	Post Project_2yr	756.68	31.49	37.75		37.87	0.002116	2.74	276.43	60.99	0.23
Dry_Creek	Left Branch	1.748	Max WS	Pre-Project_2yr_update	767.57	31.49	37.80		37.92	0.002105	2.75	279.52	66.26	0.23
Dry_Creek	Left Branch	1.748	Max WS	Pre-Project_10yr_update	1836.14	31.49	39.24		39.57	0.004634	4.73	461.08	186.07	0.35
Dry_Creek	Left Branch	1.748	Max WS	Pre-Project_25yr	2627.75	31.49	40.05		40.47	0.005430	5.49	623.45	207.51	0.38
Dry_Creek	Left Branch	1.748	Max WS	Pre-Project_50yr_update	3200.23	31.49	40.79		41.20	0.005121	5.63	783.70	240.21	0.37

Dry_Creek	Left Branch	1.748	Max WS	Pre-Project_100yr_update	3604.43	31.49	41.79		42.09	0.003376	4.98	1027.59	244.20	0.31
Dry_Creek	Left Branch	1.748	Max WS	Pre-Project_200yr_update	4537.05	31.49	43.03		43.30	0.002676	4.88	1327.30	244.20	0.28
Dry_Creek	Left Branch	1.748	Max WS	Pre-Project_500yr_update	5991.65	31.49	44.72		44.98	0.002127	4.86	1739.92	244.20	0.26
Dry_Creek	Left Branch	1.748	Max WS	Post Project_500yr	6145.01	31.49	44.75		45.02	0.002212	4.96	1746.57	244.20	0.26
Dry_Creek	Left Branch	1.748	Max WS	Post Project_200 yr	4666.73	31.49	43.06		43.34	0.002784	4.98	1335.32	244.20	0.29
Dry_Creek	Left Branch	1.748	Max WS	Post Project_100yr	3678.83	31.49	41.82		42.13	0.003457	5.06	1034.47	244.20	0.31
Dry_Creek	Left Branch	1.748	Max WS	Post Project_50yr	3253.55	31.49	40.82		41.24	0.005195	5.68	790.89	241.78	0.37
Dry_Creek	Left Branch	1.748	Max WS	Post Project_25yr	2655.18	31.49	40.07		40.49	0.005454	5.51	628.50	207.78	0.38
Dry_Creek	Left Branch	1.748	Max WS	Post Project_10yr	1844.54	31.49	39.25		39.58	0.004644	4.74	462.99	186.53	0.35
Dry_Creek	Left Branch	1.748	Max WS	Post Project_2yr	756.63	31.49	37.75		37.87	0.002119	2.74	276.29	60.99	0.23
Dry_Creek	Rt_Branch_Down	0.824	Max WS	Pre-Project_2yr_update	773.26	35.79	42.93		43.03	0.002822	2.99	440.12	434.60	0.26
Dry_Creek	Rt_Branch_Down	0.824	Max WS	Pre-Project_10yr_update	1962.16	35.79	43.81		43.96	0.004093	4.10	886.85	613.54	0.32
Dry_Creek	Rt_Branch_Down	0.824	Max WS	Pre-Project_25yr	2857.02	35.79	44.33		44.49	0.004647	4.66	1362.80	1072.08	0.35
Dry_Creek	Rt_Branch_Down	0.824	Max WS	Pre-Project_50yr_update	3652.91	35.79	44.75		44.87	0.003522	4.26	1810.60	1082.27	0.31
Dry_Creek	Rt_Branch_Down	0.824	Max WS	Pre-Project_100yr_update	4542.46	35.79	45.30		45.38	0.002373	3.71	2409.72	1092.49	0.26
Dry_Creek	Rt_Branch_Down	0.824	Max WS	Pre-Project_200yr_update	5575.33	35.79	45.87		45.94	0.001767	3.38	3036.36	1095.49	0.22
Dry_Creek	Rt_Branch_Down	0.824	Max WS	Pre-Project_500yr_update	6766.05	35.79	46.68		46.74	0.001163	2.95	3927.71	1099.74	0.18
Dry_Creek	Rt_Branch_Down	0.824	Max WS	Post Project_500yr	6766.05	35.79	46.73		46.78	0.001120	2.90	3974.45	1099.96	0.18
Dry_Creek	Rt_Branch_Down	0.824	Max WS	Post Project_200 yr	5574.34	35.79	45.91		45.98	0.001686	3.32	3082.44	1095.71	0.22
Dry_Creek	Rt_Branch_Down	0.824	Max WS	Post Project_100yr	4542.46	35.79	45.33		45.41	0.002283	3.64	2440.92	1092.64	0.25
Dry_Creek	Rt_Branch_Down	0.824	Max WS	Post Project_50yr	3652.79	35.79	44.76		44.88	0.003455	4.22	1822.95	1082.55	0.30
Dry_Creek	Rt_Branch_Down	0.824	Max WS	Post Project_25yr	2856.99	35.79	44.33		44.49	0.004648	4.66	1362.78	1072.08	0.35
Dry_Creek	Rt_Branch_Down	0.824	Max WS	Post Project_10yr	1962.16	35.79	43.81		43.96	0.004093	4.10	886.85	613.54	0.32
Dry_Creek	Rt_Branch_Down	0.824	Max WS	Post Project_2yr	773.28	35.79	42.93		43.03	0.002822	2.99	440.12	434.60	0.26
Dry_Creek	Rt_Branch_Down	0.823	Max WS	Pre-Project_2yr_update	773.28	35.79	42.89		43.02	0.003289	3.21	370.11	309.13	0.28
Dry_Creek	Rt_Branch_Down	0.823	Max WS	Pre-Project_10yr_update	1962.16	35.79	43.75		43.98	0.005717	4.80	643.80	331.12	0.38
Dry_Creek	Rt_Branch_Down	0.823	Max WS	Pre-Project_25yr	2856.98	35.79	44.23		44.51	0.006571	5.48	831.27	405.59	0.41
Dry_Creek	Rt_Branch_Down	0.823	Max WS	Pre-Project_50yr_update	3652.79	35.79	44.60		44.92	0.006968	5.89	983.37	414.70	0.43
Dry_Creek	Rt_Branch_Down	0.823	Max WS	Pre-Project_100yr_update	4542.46	35.79	45.14		45.45	0.006188	5.89	1208.41	427.65	0.41
Dry_Creek	Rt_Branch_Down	0.823	Max WS	Pre-Project_200yr_update	5530.72	35.79	45.70		46.00	0.005470	5.85	1450.18	430.61	0.39
Dry_Creek	Rt_Branch_Down	0.823	Max WS	Pre-Project_500yr_update	6595.27	35.79	46.53		46.79	0.004078	5.45	1806.03	434.92	0.34
Dry_Creek	Rt_Branch_Down	0.823	Max WS	Post Project_500yr	6616.37	35.79	46.57		46.83	0.003975	5.40	1825.51	435.15	0.34
Dry_Creek	Rt_Branch_Down	0.823	Max WS	Post Project_200 yr	5539.57	35.79	45.75		46.04	0.005277	5.78	1469.88	430.85	0.38
Dry_Creek	Rt_Branch_Down	0.823	Max WS	Post Project_100yr	4542.46	35.79	45.17		45.47	0.005997	5.81	1222.12	427.82	0.40
Dry_Creek	Rt_Branch_Down	0.823	Max WS	Post Project_50yr	3652.79	35.79	44.62		44.93	0.006871	5.86	988.64	415.01	0.43
Dry_Creek	Rt_Branch_Down	0.823	Max WS	Post Project_25yr	2856.99	35.79	44.23		44.51	0.006572	5.48	831.26	405.58	0.41
Dry_Creek	Rt_Branch_Down	0.823	Max WS	Post Project_10yr	1962.16	35.79	43.75		43.98	0.005717	4.80	643.81	331.12	0.38
Dry_Creek	Rt_Branch_Down	0.823	Max WS	Post Project_2yr	773.25	35.79	42.89		43.02	0.003288	3.21	370.11	309.13	0.28
Dry_Creek	Rt_Branch_Down	0.814			Lat Struct									
Dry_Creek	Rt_Branch_Down	0.73	Max WS	Pre-Project_2yr_update	362.72	32.86	42.19		42.21	0.000440	1.38	262.64	48.21	0.10
Dry_Creek	Rt_Branch_Down	0.73	Max WS	Pre-Project_10yr_update	547.37	32.86	42.70		42.75	0.000836	1.90	288.67	53.68	0.14
Dry_Creek	Rt_Branch_Down	0.73	Max WS	Pre-Project_25yr	707.50	32.86	42.99		43.06	0.001052	2.13	396.79	166.76	0.16
Dry_Creek	Rt_Branch_Down	0.73	Max WS	Pre-Project_50yr_update	555.66	32.86	43.55		43.57	0.000406	1.38	528.22	264.30	0.10
Dry_Creek	Rt_Branch_Down	0.73	Max WS	Pre-Project_100yr_update	372.50	32.86	44.32		44.32	0.000088	0.70	738.30	311.77	0.05
Dry_Creek	Rt_Branch_Down	0.73	Max WS	Pre-Project_200yr_update	487.22	32.86	45.02		45.03	0.000083	0.73	932.38	354.05	0.05
Dry_Creek	Rt_Branch_Down	0.73	Max WS	Pre-Project_500yr_update	1003.36	32.86	46.07		46.09	0.000164	1.12	1219.94	416.71	0.07
Dry_Creek	Rt_Branch_Down	0.73	Max WS	Post Project_500yr	1045.59	32.86	46.13		46.15	0.000171	1.15	1236.07	420.22	0.07
Dry_Creek	Rt_Branch_Down	0.73	Max WS	Post Project_200 yr	495.83	32.86	45.10		45.10	0.000081	0.72	952.40	358.42	0.05
Dry_Creek	Rt_Branch_Down	0.73	Max WS	Post Project_100yr	358.22	32.86	44.38		44.38	0.000077	0.66	755.37	315.49	0.05
Dry_Creek	Rt_Branch_Down	0.73	Max WS	Post Project_50yr	513.20	32.86	43.59		43.61	0.000331	1.25	540.46	267.51	0.09
Dry_Creek	Rt_Branch_Down	0.73	Max WS	Post Project_25yr	702.27	32.86	43.00		43.06	0.001032	2.12	397.73	166.81	0.16
Dry_Creek	Rt_Branch_Down	0.73	Max WS	Post Project_10yr	547.30	32.86	42.70		42.75	0.000835	1.90	288.68	53.68	0.14
Dry_Creek	Rt_Branch_Down	0.73	Max WS	Post Project_2yr	362.78	32.86	42.19		42.21	0.000440	1.38	262.64	48.21	0.10
Dry_Creek	Rt_Branch_Down	0.639	Max WS	Pre-Project_2yr_update	352.97	35.22	41.86		41.91	0.000824	1.80	196.58	38.50	0.14
Dry_Creek	Rt_Branch_Down	0.639	Max WS	Pre-Project_10yr_update	394.08	35.22	42.34		42.39	0.000818	1.83	215.54	42.51	0.14
Dry_Creek	Rt_Branch_Down	0.639	Max WS	Pre-Project_25yr	364.98	35.22	42.68		42.72	0.000590	1.59	231.69	52.26	0.12
Dry_Creek	Rt_Branch_Down	0.639	Max WS	Pre-Project_50yr_update	179.73	35.22	43.47		43.48	0.000079	0.62	351.94	146.67	0.04
Dry_Creek	Rt_Branch_Down	0.639	Max WS	Pre-Project_100yr_update	163.01	35.22	44.30		44.30	0.000034	0.44	474.44	153.45	0.03
Dry_Creek	Rt_Branch_Down	0.639	Max WS	Pre-Project_200yr_update	231.45	35.22	45.00		45.01	0.000041	0.52	620.01	317.61	0.03
Dry_Creek	Rt_Branch_Down	0.639	Max WS	Pre-Project_500yr_update	465.15	35.22	46.04		46.04	0.000074	0.77	883.93	368.51	0.05
Dry_Creek	Rt_Branch_Down	0.639	Max WS	Post Project_500yr	483.72	35.22	46.09		46.10	0.000077	0.78	898.64	371.35	0.05
Dry_Creek	Rt_Branch_Down	0.639	Max WS	Post Project_200 yr	238.15	35.22	45.08		45.08	0.000041	0.53	638.76	321.23	0.03
Dry_Creek	Rt_Branch_Down	0.639	Max WS	Post Project_100yr	162.21	35.22	44.36		44.36	0.000032	0.43	484.23	153.98	0.03
Dry_Creek	Rt_Branch_Down	0.639	Max WS	Post Project_50yr	175.66	35.22	43.53		43.54	0.000072	0.60	360.25	147.14	0.04
Dry_Creek	Rt_Branch_Down	0.639	Max WS	Post Project_25yr	350.62	35.22	42.71		42.74	0.000538	1.52	233.04	53.06	0.11
Dry_Creek	Rt_Branch_Down	0.639	Max WS	Post Project_10yr	393.51	35.22	42.34		42.39	0.000815	1.83	215.56	42.52	0.14
Dry_Creek	Rt_Branch_Down	0.639	Max WS	Post Project_2yr	353.03	35.22	41.86		41.91	0.000825	1.80	196.57	38.50	0.14

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Dry_Creek	Rt_Branch_Down	0.544	Max WS	Pre-Project_2yr_update	352.96	34.47	41.36		41.43	0.001106	2.12	167.02	32.35	0.16
Dry_Creek	Rt_Branch_Down	0.544	Max WS	Pre-Project_10yr_update	327.29	34.47	41.99		42.04	0.000677	1.76	189.23	39.34	0.12
Dry_Creek	Rt_Branch_Down	0.544	Max WS	Pre-Project_25yr	78.10	34.47	42.60		42.60	0.000024	0.35	272.73	121.88	0.02
Dry_Creek	Rt_Branch_Down	0.544	Max WS	Pre-Project_50yr_update	96.16	34.47	43.46		43.46	0.000019	0.34	376.95	123.34	0.02
Dry_Creek	Rt_Branch_Down	0.544	Max WS	Pre-Project_100yr_update	139.18	34.47	44.28		44.29	0.000022	0.39	478.70	124.74	0.02
Dry_Creek	Rt_Branch_Down	0.544	Max WS	Pre-Project_200yr_update	210.48	34.47	44.99		44.99	0.000021	0.40	812.70	282.75	0.02
Dry_Creek	Rt_Branch_Down	0.544	Max WS	Pre-Project_500yr_update	385.94	34.47	46.01		46.02	0.000034	0.55	1054.91	302.24	0.03
Dry_Creek	Rt_Branch_Down	0.544	Max WS	Post Project_500yr	398.42	34.47	46.07		46.07	0.000035	0.56	1068.38	303.33	0.03
Dry_Creek	Rt_Branch_Down	0.544	Max WS	Post Project_200 yr	217.74	34.47	45.06		45.06	0.000021	0.41	830.04	284.14	0.02
Dry_Creek	Rt_Branch_Down	0.544	Max WS	Post Project_100yr	143.39	34.47	44.35		44.35	0.000022	0.40	486.66	124.85	0.02
Dry_Creek	Rt_Branch_Down	0.544	Max WS	Post Project_50yr	96.68	34.47	43.51		43.52	0.000018	0.33	384.07	123.44	0.02
Dry_Creek	Rt_Branch_Down	0.544	Max WS	Post Project_25yr	75.78	34.47	42.63		42.63	0.000022	0.34	276.72	121.94	0.02
Dry_Creek	Rt_Branch_Down	0.544	Max WS	Post Project_10yr	325.76	34.47	42.00		42.04	0.000669	1.75	189.38	40.74	0.12
Dry_Creek	Rt_Branch_Down	0.544	Max WS	Post Project_2yr	353.02	34.47	41.36		41.43	0.001107	2.12	167.01	32.34	0.16
Dry_Creek	Rt_Branch_Down	0.446	Max WS	Pre-Project_2yr_update	352.96	34.59	40.78		40.84	0.001189	1.97	178.91	41.42	0.17
Dry_Creek	Rt_Branch_Down	0.446	Max WS	Pre-Project_10yr_update	327.26	34.59	41.69		41.72	0.000574	1.50	219.66	50.64	0.12
Dry_Creek	Rt_Branch_Down	0.446	Max WS	Pre-Project_25yr	76.55	34.59	42.59		42.59	0.000016	0.28	319.28	105.88	0.02
Dry_Creek	Rt_Branch_Down	0.446	Max WS	Pre-Project_50yr_update	107.03	34.59	43.45		43.45	0.000017	0.31	409.81	107.33	0.02
Dry_Creek	Rt_Branch_Down	0.446	Max WS	Pre-Project_100yr_update	161.61	34.59	44.27		44.27	0.000022	0.39	498.03	108.71	0.03
Dry_Creek	Rt_Branch_Down	0.446	Max WS	Pre-Project_200yr_update	259.90	34.59	44.97		44.98	0.000039	0.55	573.91	109.89	0.03
Dry_Creek	Rt_Branch_Down	0.446	Max WS	Pre-Project_500yr_update	458.40	34.59	45.99		46.00	0.000072	0.80	685.76	111.60	0.05
Dry_Creek	Rt_Branch_Down	0.446	Max WS	Post Project_500yr	476.91	34.59	46.05		46.06	0.000075	0.83	692.04	111.70	0.05
Dry_Creek	Rt_Branch_Down	0.446	Max WS	Post Project_200 yr	270.04	34.59	45.05		45.05	0.000040	0.56	581.84	110.01	0.03
Dry_Creek	Rt_Branch_Down	0.446	Max WS	Post Project_100yr	170.04	34.59	44.34		44.34	0.000024	0.41	504.90	108.82	0.03
Dry_Creek	Rt_Branch_Down	0.446	Max WS	Post Project_50yr	108.38	34.59	43.51		43.51	0.000016	0.31	416.02	107.42	0.02
Dry_Creek	Rt_Branch_Down	0.446	Max WS	Post Project_25yr	75.71	34.59	42.62		42.62	0.000015	0.27	322.79	105.94	0.02
Dry_Creek	Rt_Branch_Down	0.446	Max WS	Post Project_10yr	325.72	34.59	41.69		41.73	0.000565	1.49	220.06	50.77	0.12
Dry_Creek	Rt_Branch_Down	0.446	Max WS	Post Project_2yr	353.02	34.59	40.78		40.84	0.001191	1.97	178.87	41.42	0.17
Dry_Creek	Rt_Branch_Down	0.367	Max WS	Pre-Project_2yr_update	352.96	33.97	40.33		40.38	0.001009	1.74	202.43	51.33	0.15
Dry_Creek	Rt_Branch_Down	0.367	Max WS	Pre-Project_10yr_update	327.02	33.97	41.51		41.53	0.000339	1.18	327.09	174.91	0.09
Dry_Creek	Rt_Branch_Down	0.367	Max WS	Pre-Project_25yr	88.31	33.97	42.59		42.59	0.000003	0.13	1217.91	584.45	0.01
Dry_Creek	Rt_Branch_Down	0.367	Max WS	Pre-Project_50yr_update	142.51	33.97	43.44		43.44	0.000003	0.14	1720.20	589.56	0.01
Dry_Creek	Rt_Branch_Down	0.367	Max WS	Pre-Project_100yr_update	225.91	33.97	44.27		44.27	0.000004	0.16	2206.80	594.84	0.01
Dry_Creek	Rt_Branch_Down	0.367	Max WS	Pre-Project_200yr_update	369.69	33.97	44.96		44.96	0.000006	0.21	2622.64	599.85	0.01
Dry_Creek	Rt_Branch_Down	0.367	Max WS	Pre-Project_500yr_update	620.78	33.97	45.98		45.98	0.000008	0.28	3235.15	607.69	0.02
Dry_Creek	Rt_Branch_Down	0.367	Max WS	Post Project_500yr	641.35	33.97	46.04		46.04	0.000008	0.29	3269.53	608.23	0.02
Dry_Creek	Rt_Branch_Down	0.367	Max WS	Post Project_200 yr	384.73	33.97	45.04		45.04	0.000006	0.22	2666.07	600.37	0.01
Dry_Creek	Rt_Branch_Down	0.367	Max WS	Post Project_100yr	240.68	33.97	44.33		44.33	0.000004	0.17	2244.44	595.29	0.01
Dry_Creek	Rt_Branch_Down	0.367	Max WS	Post Project_50yr	145.40	33.97	43.50		43.50	0.000003	0.14	1754.61	589.91	0.01
Dry_Creek	Rt_Branch_Down	0.367	Max WS	Post Project_25yr	89.12	33.97	42.62		42.62	0.000003	0.13	1237.55	584.65	0.01
Dry_Creek	Rt_Branch_Down	0.367	Max WS	Post Project_10yr	325.40	33.97	41.52		41.54	0.000332	1.17	328.97	175.09	0.09
Dry_Creek	Rt_Branch_Down	0.367	Max WS	Post Project_2yr	353.02	33.97	40.33		40.38	0.001011	1.74	202.35	51.32	0.15
Dry_Creek	Rt_Branch_Down	0.284	Max WS	Pre-Project_2yr_update	307.96	33.95	39.92		39.97	0.000956	1.83	172.86	65.91	0.15
Dry_Creek	Rt_Branch_Down	0.284	Max WS	Pre-Project_10yr_update	219.92	33.95	41.43		41.44	0.000108	0.73	460.44	254.25	0.05
Dry_Creek	Rt_Branch_Down	0.284	Max WS	Pre-Project_25yr	261.00	33.95	42.58		42.58	0.000046	0.54	788.24	305.79	0.04
Dry_Creek	Rt_Branch_Down	0.284	Max WS	Pre-Project_50yr_update	316.32	33.95	43.44		43.44	0.000016	0.34	1602.20	519.20	0.02
Dry_Creek	Rt_Branch_Down	0.284	Max WS	Pre-Project_100yr_update	657.17	33.95	44.26		44.26	0.000035	0.53	2026.68	521.77	0.03
Dry_Creek	Rt_Branch_Down	0.284	Max WS	Pre-Project_200yr_update	1080.85	33.95	44.94		44.95	0.000057	0.72	2386.40	523.94	0.04
Dry_Creek	Rt_Branch_Down	0.284	Max WS	Pre-Project_500yr_update	1604.97	33.95	45.96		45.96	0.000066	0.83	2916.91	527.12	0.05
Dry_Creek	Rt_Branch_Down	0.284	Max WS	Post Project_500yr	1639.42	33.95	46.01		46.02	0.000067	0.84	2946.52	527.29	0.05
Dry_Creek	Rt_Branch_Down	0.284	Max WS	Post Project_200 yr	1123.41	33.95	45.02		45.02	0.000058	0.73	2423.99	524.16	0.04
Dry_Creek	Rt_Branch_Down	0.284	Max WS	Post Project_100yr	708.30	33.95	44.32		44.32	0.000038	0.56	2059.04	521.97	0.03
Dry_Creek	Rt_Branch_Down	0.284	Max WS	Post Project_50yr	317.83	33.95	43.50		43.50	0.000015	0.34	1632.60	519.39	0.02
Dry_Creek	Rt_Branch_Down	0.284	Max WS	Post Project_25yr	264.12	33.95	42.61		42.61	0.000046	0.54	798.67	308.72	0.04
Dry_Creek	Rt_Branch_Down	0.284	Max WS	Post Project_10yr	220.83	33.95	41.44		41.45	0.000107	0.73	463.42	254.60	0.05
Dry_Creek	Rt_Branch_Down	0.284	Max WS	Post Project_2yr	309.36	33.95	39.91		39.96	0.000968	1.84	172.49	65.00	0.15
Dry_Creek	Rt_Branch_Down	0.253	Max WS	Pre-Project_2yr_update	307.94	33.64	39.78		39.82	0.000802	1.61	191.34	46.03	0.14
Dry_Creek	Rt_Branch_Down	0.253	Max WS	Pre-Project_10yr_update	534.17	33.64	41.26		41.32	0.001021	2.01	265.92	55.08	0.16
Dry_Creek	Rt_Branch_Down	0.253	Max WS	Pre-Project_25yr	995.32	33.64	42.27		42.42	0.001975	3.08	323.88	58.65	0.23
Dry_Creek	Rt_Branch_Down	0.253	Max WS	Pre-Project_50yr_update	1362.58	33.64	43.10		43.31	0.002335	3.67	372.49	59.17	0.26
Dry_Creek	Rt_Branch_Down	0.253	Max WS	Pre-Project_100yr_update	1626.60	33.64	44.04		44.15	0.001321	3.02	928.88	491.09	0.20
Dry_Creek	Rt_Branch_Down	0.253	Max WS	Pre-Project_200yr_update	2066.76	33.64	44.79		44.88	0.001100	2.94	1301.38	511.13	0.18
Dry_Creek	Rt_Branch_Down	0.253	Max WS	Pre-Project_500yr_update	2441.87	33.64	45.85		45.91	0.000669	2.49	1861.48	539.86	0.15
Dry_Creek	Rt_Branch_Down	0.253	Max WS	Post Project_500yr	2496.88	33.64	45.91		45.97	0.000672	2.51	1891.68	541.36	0.15
Dry_Creek	Rt_Branch_Down	0.253	Max WS	Post Project_200 yr	2181.49	33.64	44.85		44.95	0.001163	3.04	1333.30	512.81	0.19

Dry_Creek	Rt_Branch_Down	0.253	Max WS	Post Project_100yr	1634.12	33.64	44.13		44.23	0.001232	2.94	970.90	493.39	0.19
Dry_Creek	Rt_Branch_Down	0.253	Max WS	Post Project_50yr	1389.38	33.64	43.15		43.37	0.002360	3.71	375.71	59.21	0.26
Dry_Creek	Rt_Branch_Down	0.253	Max WS	Post Project_25yr	1016.91	33.64	42.30		42.45	0.002027	3.13	325.55	58.67	0.23
Dry_Creek	Rt_Branch_Down	0.253	Max WS	Post Project_10yr	537.79	33.64	41.27		41.33	0.001029	2.02	266.49	55.14	0.16
Dry_Creek	Rt_Branch_Down	0.253	Max WS	Post Project_2yr	309.35	33.64	39.77		39.81	0.000813	1.62	190.99	45.98	0.14
Dry_Creek	Rt_Branch_Down	0.252	Max WS	Pre-Project_2yr_update	307.94	33.64	39.78	35.84	39.82	0.000802	1.61	191.30	46.02	0.14
Dry_Creek	Rt_Branch_Down	0.252	Max WS	Pre-Project_10yr_update	534.17	33.64	41.26	36.60	41.32	0.001022	2.01	265.86	55.07	0.16
Dry_Creek	Rt_Branch_Down	0.252	Max WS	Pre-Project_25yr	995.28	33.64	42.27	37.67	42.42	0.001978	3.08	323.76	58.65	0.23
Dry_Creek	Rt_Branch_Down	0.252	Max WS	Pre-Project_50yr_update	1362.58	33.64	43.10	38.39	43.30	0.002338	3.67	372.34	59.17	0.26
Dry_Creek	Rt_Branch_Down	0.252	Max WS	Pre-Project_100yr_update	1626.53	33.64	44.04	38.86	44.15	0.001323	3.02	928.00	491.04	0.20
Dry_Creek	Rt_Branch_Down	0.252	Max WS	Pre-Project_200yr_update	2066.60	33.64	44.78	39.56	44.88	0.001101	2.94	1300.79	511.10	0.18
Dry_Creek	Rt_Branch_Down	0.252	Max WS	Pre-Project_500yr_update	2441.87	33.64	45.85	40.11	45.91	0.000670	2.49	1861.11	539.84	0.15
Dry_Creek	Rt_Branch_Down	0.252	Max WS	Post Project_500yr	2496.88	33.64	45.91	40.20	45.97	0.000673	2.51	1891.31	541.34	0.15
Dry_Creek	Rt_Branch_Down	0.252	Max WS	Post Project_200 yr	2181.19	33.64	44.85	39.73	44.95	0.001164	3.04	1332.67	512.78	0.19
Dry_Creek	Rt_Branch_Down	0.252	Max WS	Post Project_100yr	1633.99	33.64	44.12	38.87	44.23	0.001233	2.94	970.15	493.35	0.19
Dry_Creek	Rt_Branch_Down	0.252	Max WS	Post Project_50yr	1389.38	33.64	43.15	38.44	43.36	0.002363	3.71	375.56	59.21	0.26
Dry_Creek	Rt_Branch_Down	0.252	Max WS	Post Project_25yr	1016.88	33.64	42.30	37.71	42.45	0.002030	3.13	325.43	58.67	0.23
Dry_Creek	Rt_Branch_Down	0.252	Max WS	Post Project_10yr	537.80	33.64	41.27	36.61	41.33	0.001030	2.02	266.44	55.14	0.16
Dry_Creek	Rt_Branch_Down	0.252	Max WS	Post Project_2yr	309.36	33.64	39.77	35.84	39.81	0.000813	1.62	190.95	45.98	0.14
Dry_Creek	Rt_Branch_Down	0.248			Bridge									
Dry_Creek	Rt_Branch_Down	0.244	Max WS	Pre-Project_2yr_update	307.94	33.65	39.52		39.56	0.000795	1.62	190.12	44.75	0.14
Dry_Creek	Rt_Branch_Down	0.244	Max WS	Pre-Project_10yr_update	534.17	33.65	40.96		41.02	0.001011	2.07	257.98	49.96	0.16
Dry_Creek	Rt_Branch_Down	0.244	Max WS	Pre-Project_25yr	995.26	33.65	41.94		42.11	0.002095	3.22	310.58	59.19	0.24
Dry_Creek	Rt_Branch_Down	0.244	Max WS	Pre-Project_50yr_update	1361.37	33.65	42.43		42.68	0.003010	4.05	341.39	68.30	0.29
Dry_Creek	Rt_Branch_Down	0.244	Max WS	Pre-Project_100yr_update	1613.94	33.65	42.94		43.24	0.003227	4.42	378.11	75.65	0.30
Dry_Creek	Rt_Branch_Down	0.244	Max WS	Pre-Project_200yr_update	2038.41	33.65	44.03		44.21	0.001946	3.79	957.93	501.48	0.24
Dry_Creek	Rt_Branch_Down	0.244	Max WS	Pre-Project_500yr_update	2378.88	33.65	45.74		45.79	0.000648	2.50	1835.01	528.77	0.14
Dry_Creek	Rt_Branch_Down	0.244	Max WS	Post Project_500yr	2427.21	33.65	45.79		45.85	0.000648	2.51	1864.57	529.67	0.14
Dry_Creek	Rt_Branch_Down	0.244	Max WS	Post Project_200 yr	2145.86	33.65	44.14		44.32	0.001951	3.83	1012.85	503.23	0.24
Dry_Creek	Rt_Branch_Down	0.244	Max WS	Post Project_100yr	1620.17	33.65	42.98		43.28	0.003179	4.40	381.49	76.25	0.30
Dry_Creek	Rt_Branch_Down	0.244	Max WS	Post Project_50yr	1387.72	33.65	42.45		42.72	0.003085	4.11	343.10	68.80	0.29
Dry_Creek	Rt_Branch_Down	0.244	Max WS	Post Project_25yr	1016.81	33.65	41.97		42.14	0.002154	3.27	312.32	59.65	0.24
Dry_Creek	Rt_Branch_Down	0.244	Max WS	Post Project_10yr	537.79	33.65	40.96		41.03	0.001020	2.08	258.45	50.00	0.16
Dry_Creek	Rt_Branch_Down	0.244	Max WS	Post Project_2yr	309.36	33.65	39.51		39.55	0.000806	1.63	189.76	44.72	0.14
Dry_Creek	Rt_Branch_Down	0.243	Max WS	Pre-Project_2yr_update	307.94	33.65	39.52		39.56	0.000795	1.62	190.09	44.75	0.14
Dry_Creek	Rt_Branch_Down	0.243	Max WS	Pre-Project_10yr_update	534.17	33.65	40.95		41.02	0.001012	2.07	257.93	49.96	0.16
Dry_Creek	Rt_Branch_Down	0.243	Max WS	Pre-Project_25yr	995.26	33.65	41.94		42.10	0.002097	3.22	310.45	59.15	0.24
Dry_Creek	Rt_Branch_Down	0.243	Max WS	Pre-Project_50yr_update	1361.29	33.65	42.43		42.68	0.003015	4.05	341.17	68.23	0.29
Dry_Creek	Rt_Branch_Down	0.243	Max WS	Pre-Project_100yr_update	1613.70	33.65	42.93		43.24	0.003232	4.42	377.84	75.60	0.30
Dry_Creek	Rt_Branch_Down	0.243	Max WS	Pre-Project_200yr_update	2038.58	33.65	44.03		44.20	0.001952	3.80	956.40	501.43	0.24
Dry_Creek	Rt_Branch_Down	0.243	Max WS	Pre-Project_500yr_update	2377.50	33.65	45.74		45.79	0.000648	2.49	1834.66	528.76	0.14
Dry_Creek	Rt_Branch_Down	0.243	Max WS	Post Project_500yr	2428.50	33.65	45.79		45.85	0.000649	2.51	1864.22	529.66	0.14
Dry_Creek	Rt_Branch_Down	0.243	Max WS	Post Project_200 yr	2145.86	33.65	44.14		44.31	0.001955	3.84	1011.49	503.19	0.24
Dry_Creek	Rt_Branch_Down	0.243	Max WS	Post Project_100yr	1620.00	33.65	42.98		43.28	0.003184	4.41	381.22	76.21	0.30
Dry_Creek	Rt_Branch_Down	0.243	Max WS	Post Project_50yr	1387.64	33.65	42.45		42.71	0.003090	4.11	342.87	68.73	0.29
Dry_Creek	Rt_Branch_Down	0.243	Max WS	Post Project_25yr	1016.83	33.65	41.97		42.14	0.002156	3.27	312.18	59.61	0.24
Dry_Creek	Rt_Branch_Down	0.243	Max WS	Post Project_10yr	537.79	33.65	40.96		41.03	0.001020	2.08	258.40	50.00	0.16
Dry_Creek	Rt_Branch_Down	0.243	Max WS	Post Project_2yr	309.35	33.65	39.51		39.55	0.000807	1.63	189.72	44.72	0.14
Dry_Creek	Rt_Branch_Down	0.242			Lat Struct									

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Dry_Creek	Rt_Branch_Down	0.235			Lat Struct									
Dry_Creek	Rt_Branch_Down	0.229	Max WS	Pre-Project_2yr_update	307.93	33.21	39.41		39.48	0.001517	2.09	147.14	37.62	0.19
Dry_Creek	Rt_Branch_Down	0.229	Max WS	Pre-Project_10yr_update	534.15	33.21	40.82		40.92	0.002002	2.58	206.99	48.06	0.22
Dry_Creek	Rt_Branch_Down	0.229	Max WS	Pre-Project_25yr	995.04	33.21	41.67		41.92	0.004316	3.97	250.91	54.66	0.33
Dry_Creek	Rt_Branch_Down	0.229	Max WS	Pre-Project_50yr_update	1328.80	33.21	42.24		42.45	0.003965	3.98	517.46	374.01	0.32
Dry_Creek	Rt_Branch_Down	0.229	Max WS	Pre-Project_100yr_update	1472.71	33.21	42.92		43.04	0.002200	3.23	779.42	399.73	0.24
Dry_Creek	Rt_Branch_Down	0.229	Max WS	Pre-Project_200yr_update	1706.76	33.21	44.05		44.10	0.000954	2.40	1235.03	411.46	0.16
Dry_Creek	Rt_Branch_Down	0.229	Max WS	Pre-Project_500yr_update	1967.82	33.21	45.73		45.75	0.000359	1.71	1937.88	426.06	0.10
Dry_Creek	Rt_Branch_Down	0.229	Max WS	Post Project_500yr	2010.07	33.21	45.78		45.81	0.000362	1.73	1961.62	426.54	0.10
Dry_Creek	Rt_Branch_Down	0.229	Max WS	Post Project_200 yr	1785.26	33.21	44.14		44.20	0.000958	2.43	1275.29	412.31	0.16
Dry_Creek	Rt_Branch_Down	0.229	Max WS	Post Project_100yr	1468.04	33.21	42.98		43.09	0.002055	3.15	801.80	401.85	0.23
Dry_Creek	Rt_Branch_Down	0.229	Max WS	Post Project_50yr	1351.27	33.21	42.28		42.49	0.003933	3.98	530.24	375.31	0.32
Dry_Creek	Rt_Branch_Down	0.229	Max WS	Post Project_25yr	1016.65	33.21	41.70		41.96	0.004423	4.02	252.77	54.92	0.33
Dry_Creek	Rt_Branch_Down	0.229	Max WS	Post Project_10yr	537.78	33.21	40.82		40.93	0.002020	2.59	207.38	48.12	0.22

Dry_Cre ek	Rt_Branch_Dow n	0.229	Max WS	Post Project_2yr	309.35	33.21	39.41		39.47	0.001541	2.11	146.78	37.56	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.161	Max WS	Pre-Project_2yr_update	307.92	32.21	38.84		38.92	0.001663	2.28	135.03	30.10	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.161	Max WS	Pre-Project_10yr_update	407.10	32.21	40.27		40.34	0.001495	2.14	190.39	44.76	0.18
Dry_Cre ek	Rt_Branch_Dow n	0.161	Max WS	Pre-Project_25yr	365.26	32.21	41.20		41.24	0.000648	1.52	264.24	100.11	0.12
Dry_Cre ek	Rt_Branch_Dow n	0.161	Max WS	Pre-Project_50yr_update	357.98	32.21	41.79		41.82	0.000391	1.27	323.27	101.74	0.10
Dry_Cre ek	Rt_Branch_Dow n	0.161	Max WS	Pre-Project_100yr_update	458.87	32.21	42.65		42.67	0.000351	1.33	410.34	104.11	0.09
Dry_Cre ek	Rt_Branch_Dow n	0.161	Max WS	Pre-Project_200yr_update	698.33	32.21	43.88		43.92	0.000387	1.58	539.80	107.65	0.10
Dry_Cre ek	Rt_Branch_Dow n	0.161	Max WS	Pre-Project_500yr_update	1065.09	32.21	45.61		45.66	0.000387	1.82	729.11	113.06	0.11
Dry_Cre ek	Rt_Branch_Dow n	0.161	Max WS	Post Project_500yr	1080.14	32.21	45.67		45.71	0.000388	1.83	735.37	113.24	0.11
Dry_Cre ek	Rt_Branch_Dow n	0.161	Max WS	Post Project_200 yr	726.14	32.21	43.98		44.01	0.000397	1.62	550.08	107.95	0.10
Dry_Cre ek	Rt_Branch_Dow n	0.161	Max WS	Post Project_100yr	468.21	32.21	42.72		42.74	0.000349	1.34	417.68	104.31	0.09
Dry_Cre ek	Rt_Branch_Dow n	0.161	Max WS	Post Project_50yr	364.03	32.21	41.83		41.86	0.000392	1.28	327.29	101.86	0.10
Dry_Cre ek	Rt_Branch_Dow n	0.161	Max WS	Post Project_25yr	365.53	32.21	41.24		41.27	0.000632	1.50	267.49	100.20	0.12
Dry_Cre ek	Rt_Branch_Dow n	0.161	Max WS	Post Project_10yr	406.29	32.21	40.28		40.35	0.001479	2.13	190.89	44.84	0.18
Dry_Cre ek	Rt_Branch_Dow n	0.161	Max WS	Post Project_2yr	309.35	32.21	38.82		38.90	0.001685	2.30	134.46	29.85	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.131	Max WS	Pre-Project_2yr_update	307.91	30.55	38.57		38.64	0.002013	2.08	148.20	46.07	0.20
Dry_Cre ek	Rt_Branch_Dow n	0.131	Max WS	Pre-Project_10yr_update	488.82	30.55	39.99		40.07	0.001680	2.23	219.36	53.81	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.131	Max WS	Pre-Project_25yr	643.48	30.55	40.92		41.01	0.001558	2.37	276.41	71.08	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.131	Max WS	Pre-Project_50yr_update	740.18	30.55	41.54		41.62	0.001336	2.37	330.80	89.13	0.18
Dry_Cre ek	Rt_Branch_Dow n	0.131	Max WS	Pre-Project_100yr_update	928.41	30.55	42.40		42.49	0.001207	2.49	407.73	91.64	0.18
Dry_Cre ek	Rt_Branch_Dow n	0.131	Max WS	Pre-Project_200yr_update	1334.65	30.55	43.59		43.71	0.001284	2.89	518.19	95.12	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.131	Max WS	Pre-Project_500yr_update	2043.58	30.55	45.25		45.42	0.001400	3.46	678.68	99.91	0.20
Dry_Cre ek	Rt_Branch_Dow n	0.131	Max WS	Post Project_500yr	2086.21	30.55	45.30		45.47	0.001432	3.51	683.06	100.04	0.21
Dry_Cre ek	Rt_Branch_Dow n	0.131	Max WS	Post Project_200 yr	1396.29	30.55	43.67		43.80	0.001352	2.99	525.49	95.34	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.131	Max WS	Post Project_100yr	962.27	30.55	42.46		42.56	0.001249	2.55	413.38	91.82	0.18
Dry_Cre ek	Rt_Branch_Dow n	0.131	Max WS	Post Project_50yr	750.98	30.55	41.57		41.66	0.001340	2.39	334.20	89.25	0.18
Dry_Cre ek	Rt_Branch_Dow n	0.131	Max WS	Post Project_25yr	650.39	30.55	40.96		41.04	0.001560	2.37	278.70	72.02	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.131	Max WS	Post Project_10yr	490.17	30.55	40.01		40.08	0.001675	2.23	219.98	53.87	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.131	Max WS	Post Project_2yr	309.35	30.55	38.54		38.61	0.002078	2.10	147.03	45.93	0.21
Dry_Cre ek	Rt_Branch_Dow n	0.04	Max WS	Pre-Project_2yr_update	307.89	30.27	37.80		37.86	0.001264	1.96	157.25	38.20	0.17
Dry_Cre ek	Rt_Branch_Dow n	0.04	Max WS	Pre-Project_10yr_update	516.28	30.27	39.24		39.33	0.001410	2.39	220.38	52.93	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.04	Max WS	Pre-Project_25yr	841.67	30.27	40.05		40.18	0.001874	2.98	375.68	186.48	0.22
Dry_Cre ek	Rt_Branch_Dow n	0.04	Max WS	Pre-Project_50yr_update	1069.64	30.27	40.79		40.91	0.001632	3.02	522.10	206.37	0.21
Dry_Cre ek	Rt_Branch_Dow n	0.04	Max WS	Pre-Project_100yr_update	1355.65	30.27	41.79		41.89	0.001205	2.85	760.81	258.77	0.18
Dry_Cre ek	Rt_Branch_Dow n	0.04	Max WS	Pre-Project_200yr_update	1985.56	30.27	43.03		43.12	0.001119	3.04	1124.72	312.41	0.18
Dry_Cre ek	Rt_Branch_Dow n	0.04	Max WS	Pre-Project_500yr_update	3202.98	30.27	44.73		44.82	0.001037	3.29	1659.27	317.24	0.18
Dry_Cre ek	Rt_Branch_Dow n	0.04	Max WS	Post Project_500yr	3291.16	30.27	44.75		44.85	0.001079	3.36	1667.98	317.31	0.18
Dry_Cre ek	Rt_Branch_Dow n	0.04	Max WS	Post Project_200 yr	2068.49	30.27	43.06		43.16	0.001187	3.14	1135.06	312.51	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.04	Max WS	Post Project_100yr	1400.54	30.27	41.82		41.92	0.001260	2.92	768.17	259.83	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.04	Max WS	Post Project_50yr	1091.31	30.27	40.82		40.94	0.001658	3.05	528.32	208.98	0.21
Dry_Cre ek	Rt_Branch_Dow n	0.04	Max WS	Post Project_25yr	857.96	30.27	40.08		40.20	0.001908	3.02	380.23	187.55	0.22
Dry_Cre ek	Rt_Branch_Dow n	0.04	Max WS	Post Project_10yr	518.93	30.27	39.25		39.34	0.001416	2.39	220.92	53.07	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.04	Max WS	Post Project_2yr	309.35	30.27	37.75		37.81	0.001319	1.99	155.29	37.95	0.17
Dry_Cre ek	Rt_Branch_Dow n	0.039	Max WS	Pre-Project_2yr_update	307.89	30.27	37.80		37.86	0.001265	1.96	157.20	38.20	0.17
Dry_Cre ek	Rt_Branch_Dow n	0.039	Max WS	Pre-Project_10yr_update	516.28	30.27	39.24		39.32	0.001411	2.39	220.30	52.91	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.039	Max WS	Pre-Project_25yr	841.83	30.27	40.05		40.17	0.001878	2.99	375.30	186.39	0.22
Dry_Cre ek	Rt_Branch_Dow n	0.039	Max WS	Pre-Project_50yr_update	1069.55	30.27	40.79		40.90	0.001634	3.02	521.75	206.22	0.21
Dry_Cre ek	Rt_Branch_Dow n	0.039	Max WS	Pre-Project_100yr_update	1355.65	30.27	41.79		41.89	0.001206	2.85	760.49	258.73	0.18
Dry_Cre ek	Rt_Branch_Dow n	0.039	Max WS	Pre-Project_200yr_update	1984.91	30.27	43.03		43.12	0.001119	3.04	1124.36	312.41	0.18
Dry_Cre ek	Rt_Branch_Dow n	0.039	Max WS	Pre-Project_500yr_update	3203.24	30.27	44.72		44.82	0.001038	3.29	1658.94	317.23	0.18
Dry_Cre ek	Rt_Branch_Dow n	0.039	Max WS	Post Project_500yr	3291.15	30.27	44.75		44.85	0.001080	3.37	1667.63	317.31	0.18
Dry_Cre ek	Rt_Branch_Dow n	0.039	Max WS	Post Project_200 yr	2069.70	30.27	43.06		43.16	0.001190	3.14	1134.67	312.50	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.039	Max WS	Post Project_100yr	1399.12	30.27	41.82		41.92	0.001258	2.92	767.84	259.78	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.039	Max WS	Post Project_50yr	1091.31	30.27	40.82		40.94	0.001660	3.05	527.96	208.83	0.21
Dry_Cre ek	Rt_Branch_Dow n	0.039	Max WS	Post Project_25yr	857.50	30.27	40.07		40.20	0.001909	3.02	379.84	187.45	0.22
Dry_Cre ek	Rt_Branch_Dow n	0.039	Max WS	Post Project_10yr	518.93	30.27	39.25		39.34	0.001417	2.39	220.85	53.05	0.19
Dry_Cre ek	Rt_Branch_Dow n	0.039	Max WS	Post Project_2yr	309.35	30.27	37.75		37.81	0.001320	1.99	155.24	37.95	0.17
Dry Creek	Lower	1.695	Max WS	Pre-Project_2yr_update	1075.45	29.69	37.80		37.84	0.000757	1.75	1074.14	859.17	0.14
Dry Creek	Lower	1.695	Max WS	Pre-Project_10yr_update	2352.42	29.69	39.24		39.26	0.000497	1.59	2330.97	895.66	0.12
Dry Creek	Lower	1.695	Max WS	Pre-Project_25yr	3470.10	29.69	40.05		40.07	0.000466	1.68	3133.68	1032.99	0.12
Dry Creek	Lower	1.695	Max WS	Pre-Project_50yr_update	4269.45	29.69	40.79		40.81	0.000384	1.64	3908.61	1069.95	0.11
Dry Creek	Lower	1.695	Max WS	Pre-Project_100yr_update	4959.71	29.69	41.79		41.81	0.000244	1.42	4986.22	1075.97	0.09
Dry Creek	Lower	1.695	Max WS	Pre-Project_200yr_update	6522.18	29.69	43.03		43.05	0.000202	1.42	6336.86	1139.64	0.08
Dry Creek	Lower	1.695	Max WS	Pre-Project_500yr_update	9195.02	29.69	44.72		44.75	0.000174	1.47	8279.41	1147.10	0.08
Dry Creek	Lower	1.695	Max WS	Post Project_500yr	9436.16	29.69	44.75		44.77	0.000181	1.50	8310.83	1147.19	0.08
Dry Creek	Lower	1.695	Max WS	Post Project_200 yr	6733.17	29.69	43.06		43.08	0.000212	1.46	6374.47	1139.95	0.08
Dry Creek	Lower	1.695	Max WS	Post Project_100yr	5079.94	29.69	41.82		41.84	0.000251	1.45	5016.69	1076.14	0.09
Dry	Lower	1.695	Max	Post Project_50yr	4343.54	29.69	40.82		40.84	0.000388	1.65	3940.62	1070.13	0.11

Creek			WS											
Dry Creek	Lower	1.695	Max WS	Post Project_25yr	3513.27	29.69	40.07		40.10	0.000466	1.69	3158.81	1033.73	0.12
Dry Creek	Lower	1.695	Max WS	Post Project_10yr	2363.49	29.69	39.25		39.27	0.000496	1.59	2340.13	896.06	0.12
Dry Creek	Lower	1.695	Max WS	Post Project_2yr	1066.02	29.69	37.75		37.79	0.000811	1.81	1030.07	858.09	0.15
Dry Creek	Lower	1.69			Lat Struct									
Dry Creek	Lower	1.687			Lat Struct									
Dry Creek	Lower	1.612	Max WS	Pre-Project_2yr_update	1140.82	30.26	37.49		37.52	0.000843	1.82	975.24	606.05	0.15
Dry Creek	Lower	1.612	Max WS	Pre-Project_10yr_update	2458.41	30.26	39.00		39.04	0.000646	1.87	1930.34	643.37	0.14
Dry Creek	Lower	1.612	Max WS	Pre-Project_25yr	3506.10	30.26	39.82		39.86	0.000640	1.99	2464.67	667.18	0.14
Dry Creek	Lower	1.612	Max WS	Pre-Project_50yr_update	4231.70	30.26	40.60		40.64	0.000521	1.92	2992.56	687.70	0.13
Dry Creek	Lower	1.612	Max WS	Pre-Project_100yr_update	4926.21	30.26	41.66		41.69	0.000367	1.76	3742.99	713.01	0.11
Dry Creek	Lower	1.612	Max WS	Pre-Project_200yr_update	6250.62	30.26	42.92		42.95	0.000298	1.75	4641.02	715.97	0.10
Dry Creek	Lower	1.612	Max WS	Pre-Project_500yr_update	8478.71	30.26	44.63		44.67	0.000257	1.81	5869.94	719.41	0.10
Dry Creek	Lower	1.612	Max WS	Post Project_500yr	8705.88	30.26	44.66		44.69	0.000269	1.85	5886.73	719.46	0.10
Dry Creek	Lower	1.612	Max WS	Post Project_200 yr	6443.51	30.26	42.95		42.98	0.000312	1.79	4661.08	716.03	0.10
Dry Creek	Lower	1.612	Max WS	Post Project_100yr	5021.90	30.26	41.69		41.72	0.000376	1.79	3760.35	713.06	0.11
Dry Creek	Lower	1.612	Max WS	Post Project_50yr	4317.44	30.26	40.63		40.66	0.000533	1.94	3010.90	688.02	0.13

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Dry Creek	Lower	1.612	Max WS	Post Project_25yr	3548.39	30.26	39.85		39.88	0.000643	2.00	2480.24	668.15	0.14
Dry Creek	Lower	1.612	Max WS	Post Project_10yr	2468.98	30.26	39.01		39.05	0.000645	1.87	1937.14	643.51	0.14
Dry Creek	Lower	1.612	Max WS	Post Project_2yr	1096.45	30.26	37.42		37.46	0.000851	1.82	938.32	605.07	0.15
Dry Creek	Lower	1.503	Max WS	Pre-Project_2yr_update	948.72	28.74	36.69		36.79	0.002039	2.56	371.82	102.84	0.22
Dry Creek	Lower	1.503	Max WS	Pre-Project_10yr_update	1872.30	28.74	38.08		38.25	0.002685	3.45	686.91	441.94	0.27
Dry Creek	Lower	1.503	Max WS	Pre-Project_25yr	2695.41	28.74	39.14		39.27	0.001836	3.21	1288.53	636.31	0.23
Dry Creek	Lower	1.503	Max WS	Pre-Project_50yr_update	3591.06	28.74	40.14		40.23	0.001204	2.87	1937.04	663.03	0.19
Dry Creek	Lower	1.503	Max WS	Pre-Project_100yr_update	4567.62	28.74	41.38		41.43	0.000715	2.46	2761.60	671.21	0.15
Dry Creek	Lower	1.503	Max WS	Pre-Project_200yr_update	5821.23	28.74	42.72		42.76	0.000496	2.26	3665.43	679.09	0.13
Dry Creek	Lower	1.503	Max WS	Pre-Project_500yr_update	7815.17	28.74	44.47		44.52	0.000371	2.18	4867.84	688.46	0.11
Dry Creek	Lower	1.503	Max WS	Post Project_500yr	8006.21	28.74	44.49		44.54	0.000387	2.23	4878.58	688.54	0.12
Dry Creek	Lower	1.503	Max WS	Post Project_200 yr	5968.52	28.74	42.73		42.78	0.000516	2.31	3678.00	679.19	0.13
Dry Creek	Lower	1.503	Max WS	Post Project_100yr	4648.29	28.74	41.40		41.45	0.000730	2.49	2773.88	671.31	0.15
Dry Creek	Lower	1.503	Max WS	Post Project_50yr	3659.60	28.74	40.16		40.25	0.001229	2.91	1949.43	663.18	0.19
Dry Creek	Lower	1.503	Max WS	Post Project_25yr	2745.42	28.74	39.16		39.29	0.001868	3.25	1299.81	636.49	0.23
Dry Creek	Lower	1.503	Max WS	Post Project_10yr	1885.11	28.74	38.08		38.25	0.002725	3.47	686.41	441.53	0.27
Dry Creek	Lower	1.503	Max WS	Post Project_2yr	921.75	28.74	36.63		36.73	0.002010	2.52	366.17	99.91	0.22
Dry Creek	Lower	1.50			Lat Struct									
Dry Creek	Lower	1.389	Max WS	Pre-Project_2yr_update	946.70	28.51	35.98		36.02	0.000805	1.66	610.60	185.89	0.14
Dry Creek	Lower	1.389	Max WS	Pre-Project_10yr_update	1722.55	28.51	37.21		37.26	0.001015	2.15	1124.42	612.57	0.17
Dry Creek	Lower	1.389	Max WS	Pre-Project_25yr	2513.28	28.51	38.60		38.63	0.000544	1.83	2081.70	737.36	0.13
Dry Creek	Lower	1.389	Max WS	Pre-Project_50yr_update	3369.14	28.51	39.79		39.81	0.000354	1.65	2973.79	753.64	0.10
Dry Creek	Lower	1.389	Max WS	Pre-Project_100yr_update	4364.29	28.51	41.16		41.18	0.000240	1.52	4013.76	761.49	0.09
Dry Creek	Lower	1.389	Max WS	Pre-Project_200yr_update	5549.55	28.51	42.56		42.59	0.000186	1.47	5087.98	768.79	0.08
Dry Creek	Lower	1.389	Max WS	Pre-Project_500yr_update	7446.32	28.51	44.36		44.39	0.000156	1.50	6478.85	778.54	0.08
Dry Creek	Lower	1.389	Max WS	Post Project_500yr	7635.21	28.51	44.37		44.40	0.000164	1.53	6487.15	778.59	0.08
Dry Creek	Lower	1.389	Max WS	Post Project_200 yr	5691.60	28.51	42.58		42.60	0.000194	1.50	5096.92	768.85	0.08
Dry Creek	Lower	1.389	Max WS	Post Project_100yr	4454.46	28.51	41.17		41.20	0.000248	1.55	4023.31	761.55	0.09
Dry Creek	Lower	1.389	Max WS	Post Project_50yr	3417.21	28.51	39.80		39.83	0.000361	1.67	2982.27	753.71	0.11
Dry Creek	Lower	1.389	Max WS	Post Project_25yr	2547.80	28.51	38.61		38.64	0.000554	1.85	2089.11	737.50	0.13
Dry Creek	Lower	1.389	Max WS	Post Project_10yr	1739.21	28.51	37.18		37.24	0.001059	2.19	1110.85	609.63	0.17
Dry Creek	Lower	1.389	Max WS	Post Project_2yr	920.37	28.51	35.94		35.97	0.000787	1.64	602.34	183.38	0.14
Dry Creek	Lower	1.264	Max WS	Pre-Project_2yr_update	946.31	29.25	35.33		35.38	0.001209	2.17	746.57	598.62	0.17
Dry Creek	Lower	1.264	Max WS	Pre-Project_10yr_update	1775.04	29.25	36.74		36.76	0.000563	1.65	1817.62	829.81	0.12
Dry Creek	Lower	1.264	Max WS	Pre-Project_25yr	2716.16	29.25	38.36		38.37	0.000243	1.26	3192.81	855.40	0.08
Dry Creek	Lower	1.264	Max WS	Pre-Project_50yr_update	3489.60	29.25	39.64		39.65	0.000156	1.13	4289.15	860.48	0.07
Dry Creek	Lower	1.264	Max WS	Pre-Project_100yr_update	4423.05	29.25	41.06		41.07	0.000112	1.06	5518.42	868.26	0.06
Dry Creek	Lower	1.264	Max WS	Pre-Project_200yr_update	5550.23	29.25	42.49		42.50	0.000091	1.05	6763.28	875.94	0.06
Dry Creek	Lower	1.264	Max WS	Pre-Project_500yr_update	7345.10	29.25	44.30		44.31	0.000081	1.09	8358.66	885.96	0.05
Dry Creek	Lower	1.264	Max WS	Post Project_500yr	7549.55	29.25	44.30		44.32	0.000085	1.12	8365.15	886.00	0.05
Dry Creek	Lower	1.264	Max WS	Post Project_200 yr	5688.09	29.25	42.49		42.51	0.000095	1.07	6770.33	875.98	0.06
Dry Creek	Lower	1.264	Max WS	Post Project_100yr	4519.04	29.25	41.07		41.08	0.000116	1.08	5526.18	868.31	0.06
Dry Creek	Lower	1.264	Max WS	Post Project_50yr	3539.30	29.25	39.64		39.66	0.000160	1.14	4295.88	860.52	0.07
Dry Creek	Lower	1.264	Max WS	Post Project_25yr	2742.05	29.25	38.36		38.38	0.000247	1.27	3198.08	855.41	0.08
Dry Creek	Lower	1.264	Max WS	Post Project_10yr	1748.94	29.25	36.72		36.74	0.000566	1.64	1795.60	827.53	0.12
Dry Creek	Lower	1.264	Max WS	Post Project_2yr	920.21	29.25	35.29		35.34	0.001173	2.13	724.05	578.70	0.17

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Dry Creek	Lower	1.25			Lat Struct									
Dry Creek	Lower	1.207	Max WS	Pre-Project_2yr_update	919.64	28.64	34.96		35.00	0.001276	2.11	710.71	448.90	0.17
Dry Creek	Lower	1.207	Max WS	Pre-Project_10yr_update	1524.03	28.64	36.60		36.62	0.000442	1.34	1767.71	761.05	0.11
Dry Creek	Lower	1.207	Max WS	Pre-Project_25yr	2597.93	28.64	38.29		38.30	0.000232	1.17	3090.43	797.51	0.08
Dry Creek	Lower	1.207	Max WS	Pre-Project_50yr_update	3428.15	28.64	39.59		39.60	0.000161	1.10	4139.45	813.45	0.07
Dry Creek	Lower	1.207	Max WS	Pre-Project_100yr_update	4382.06	28.64	41.02		41.04	0.000120	1.06	5322.16	839.93	0.06
Dry Creek	Lower	1.207	Max WS	Pre-Project_200yr_update	5517.21	28.64	42.46		42.47	0.000102	1.08	6576.28	897.14	0.06
Dry Creek	Lower	1.207	Max WS	Pre-Project_500yr_update	7255.09	28.64	44.27		44.29	0.000088	1.10	8242.11	933.88	0.05
Dry Creek	Lower	1.207	Max WS	Post Project_500yr	7467.93	28.64	44.28		44.29	0.000093	1.13	8247.63	933.92	0.06
Dry Creek	Lower	1.207	Max WS	Post Project_200 yr	5655.63	28.64	42.46		42.48	0.000107	1.10	6582.29	897.21	0.06
Dry Creek	Lower	1.207	Max WS	Post Project_100yr	4477.35	28.64	41.03		41.04	0.000124	1.08	5328.54	840.11	0.06
Dry Creek	Lower	1.207	Max WS	Post Project_50yr	3472.38	28.64	39.60		39.61	0.000164	1.11	4144.97	813.51	0.07
Dry Creek	Lower	1.207	Max WS	Post Project_25yr	2620.82	28.64	38.30		38.31	0.000235	1.18	3094.65	797.60	0.08
Dry Creek	Lower	1.207	Max WS	Post Project_10yr	1499.05	28.64	36.58		36.59	0.000442	1.33	1747.46	759.94	0.11
Dry Creek	Lower	1.207	Max WS	Post Project_2yr	897.11	28.64	34.93		34.97	0.001270	2.10	693.96	432.51	0.17
Dry Creek	Lower	1.203	Max WS	Pre-Project_2yr_update	919.62	29.07	34.93		34.98	0.001393	2.18	696.30	466.19	0.18
Dry Creek	Lower	1.203	Max WS	Pre-Project_10yr_update	1516.07	29.07	36.60		36.61	0.000423	1.35	1782.52	765.41	0.10
Dry Creek	Lower	1.203	Max WS	Pre-Project_25yr	2596.70	29.07	38.29		38.30	0.000227	1.19	3113.42	802.59	0.08
Dry Creek	Lower	1.203	Max WS	Pre-Project_50yr_update	3427.89	29.07	39.59		39.60	0.000158	1.11	4171.64	821.13	0.07
Dry Creek	Lower	1.203	Max WS	Pre-Project_100yr_update	4381.53	29.07	41.02		41.03	0.000117	1.07	5365.58	844.49	0.06
Dry Creek	Lower	1.203	Max WS	Pre-Project_200yr_update	5517.51	29.07	42.46		42.47	0.000100	1.08	6620.19	893.57	0.06
Dry Creek	Lower	1.203	Max WS	Pre-Project_500yr_update	7254.23	29.07	44.27		44.28	0.000085	1.10	8251.20	902.75	0.05
Dry Creek	Lower	1.203	Max WS	Post Project_500yr	7467.02	29.07	44.28		44.29	0.000090	1.13	8256.45	902.79	0.06
Dry Creek	Lower	1.203	Max WS	Post Project_200 yr	5656.84	29.07	42.46		42.47	0.000105	1.11	6626.09	893.61	0.06
Dry Creek	Lower	1.203	Max WS	Post Project_100yr	4477.35	29.07	41.03		41.04	0.000122	1.09	5371.90	844.64	0.06
Dry Creek	Lower	1.203	Max WS	Post Project_50yr	3472.38	29.07	39.59		39.61	0.000161	1.13	4177.15	821.21	0.07
Dry Creek	Lower	1.203	Max WS	Post Project_25yr	2620.11	29.07	38.29		38.30	0.000230	1.20	3117.60	802.67	0.08
Dry Creek	Lower	1.203	Max WS	Post Project_10yr	1491.40	29.07	36.57		36.58	0.000424	1.35	1762.19	764.89	0.10
Dry Creek	Lower	1.203	Max WS	Post Project_2yr	897.12	29.07	34.90		34.94	0.001351	2.14	678.75	449.34	0.18
Dry Creek	Lower	1.20			Lat Struct									
Dry Creek	Lower	1.153	Max WS	Pre-Project_2yr_update	892.89	29.11	34.72		34.74	0.000647	1.47	948.27	586.40	0.13
Dry Creek	Lower	1.153	Max WS	Pre-Project_10yr_update	1500.47	29.11	36.53		36.53	0.000210	0.99	2260.67	840.76	0.08
Dry Creek	Lower	1.153	Max WS	Pre-Project_25yr	2624.60	29.11	38.25		38.25	0.000139	0.97	3744.49	881.67	0.06
Dry Creek	Lower	1.153	Max WS	Pre-Project_50yr_update	3456.34	29.11	39.56		39.57	0.000106	0.95	4941.39	982.81	0.06
Dry Creek	Lower	1.153	Max WS	Pre-Project_100yr_update	4389.87	29.11	41.00		41.01	0.000081	0.92	6379.22	1002.90	0.05
Dry Creek	Lower	1.153	Max WS	Pre-Project_200yr_update	5518.94	29.11	42.44		42.45	0.000067	0.91	7826.03	1010.43	0.05
Dry Creek	Lower	1.153	Max WS	Pre-Project_500yr_update	7250.29	29.11	44.26		44.27	0.000058	0.94	9672.68	1020.54	0.05
Dry Creek	Lower	1.153	Max WS	Post Project_500yr	7465.10	29.11	44.26		44.27	0.000061	0.97	9677.85	1020.57	0.05
Dry Creek	Lower	1.153	Max WS	Post Project_200 yr	5658.45	29.11	42.44		42.45	0.000070	0.94	7831.91	1010.46	0.05
Dry Creek	Lower	1.153	Max WS	Post Project_100yr	4488.58	29.11	41.01		41.02	0.000085	0.94	6385.87	1002.94	0.05
Dry Creek	Lower	1.153	Max WS	Post Project_50yr	3502.94	29.11	39.56		39.57	0.000115	0.99	4947.31	983.17	0.06
Dry Creek	Lower	1.153	Max WS	Post Project_25yr	2649.41	29.11	38.25		38.26	0.000142	0.98	3748.57	881.74	0.06
Dry Creek	Lower	1.153	Max WS	Post Project_10yr	1473.26	29.11	36.50		36.51	0.000208	0.98	2238.68	838.21	0.07
Dry Creek	Lower	1.153	Max WS	Post Project_2yr	874.32	29.11	34.68		34.70	0.000656	1.48	924.50	580.10	0.13
Dry Creek	Lower	1.06	Max WS	Pre-Project_2yr_update	812.77	28.66	34.17		34.24	0.001605	2.34	545.87	573.36	0.20
Dry Creek	Lower	1.06	Max WS	Pre-Project_10yr_update	1871.01	28.66	36.39		36.40	0.000358	1.38	2204.17	871.03	0.10
Dry Creek	Lower	1.06	Max WS	Pre-Project_25yr	2991.55	28.66	38.17		38.18	0.000176	1.15	3912.01	1051.91	0.07
Dry Creek	Lower	1.06	Max WS	Pre-Project_50yr_update	3700.17	28.66	39.50		39.51	0.000120	1.06	5402.29	1191.57	0.06
Dry Creek	Lower	1.06	Max WS	Pre-Project_100yr_update	4557.80	28.66	40.97		40.97	0.000075	0.93	7172.71	1218.34	0.05
Dry Creek	Lower	1.06	Max WS	Pre-Project_200yr_update	5607.89	28.66	42.41		42.42	0.000056	0.87	8939.17	1225.36	0.04
Dry Creek	Lower	1.06	Max WS	Pre-Project_500yr_update	7253.40	28.66	44.24		44.24	0.000046	0.86	11182.31	1234.61	0.04
Dry Creek	Lower	1.06	Max WS	Post Project_500yr	7469.89	28.66	44.24		44.25	0.000049	0.89	11187.03	1234.63	0.04
Dry Creek	Lower	1.06	Max WS	Post Project_200 yr	5776.11	28.66	42.42		42.42	0.000060	0.90	8944.45	1225.39	0.05
Dry Creek	Lower	1.06	Max WS	Post Project_100yr	4665.53	28.66	40.97		40.98	0.000079	0.95	7178.29	1218.35	0.05
Dry Creek	Lower	1.06	Max WS	Post Project_50yr	3757.66	28.66	39.51		39.52	0.000123	1.07	5407.55	1191.89	0.06
Dry Creek	Lower	1.06	Max WS	Post Project_25yr	3017.57	28.66	38.17		38.18	0.000179	1.16	3915.49	1052.13	0.07
Dry Creek	Lower	1.06	Max WS	Post Project_10yr	1835.41	28.66	36.36		36.38	0.000354	1.37	2182.49	869.53	0.10
Dry Creek	Lower	1.06	Max WS	Post Project_2yr	784.25	28.66	34.13		34.20	0.001590	2.32	525.05	568.63	0.20
Dry Creek	Lower	1.05			Lat Struct									
Dry Creek	Lower	0.955 ARN-H	Max WS	Pre-Project_2yr_update	651.50	26.90	33.46		33.49	0.001296	1.91	588.00	562.36	0.17
Dry Creek	Lower	0.955 ARN-H	Max WS	Pre-Project_10yr_update	1720.63	26.90	36.27		36.28	0.000125	0.76	3280.57	1179.55	0.06
Dry Creek	Lower	0.955 ARN-H	Max WS	Pre-Project_25yr	3038.00	26.90	38.11		38.11	0.000085	0.76	5290.11	1311.70	0.05
Dry Creek	Lower	0.955 ARN-H	Max WS	Pre-Project_50yr_update	3720.25	26.90	39.46		39.47	0.000057	0.70	6811.43	1391.15	0.04

Dry Creek	Lower	0.955 ARN-H	Max WS	Pre-Project_100yr_update	4557.90	26.90	40.94		40.94	0.000057	0.78	8900.69	1705.85	0.04
Dry Creek	Lower	0.955 ARN-H	Max WS	Pre-Project_200yr_update	5599.59	26.90	42.39		42.39	0.000039	0.71	11387.36	1715.32	0.04
Dry Creek	Lower	0.955 ARN-H	Max WS	Pre-Project_500yr_update	7204.10	26.90	44.22		44.22	0.000029	0.68	14535.37	1726.71	0.03
Dry Creek	Lower	0.955 ARN-H	Max WS	Post Project_500yr	7432.53	26.90	44.22		44.23	0.000031	0.70	14540.16	1726.74	0.03
Dry Creek	Lower	0.955 ARN-H	Max WS	Post Project_200 yr	5770.29	26.90	42.39		42.40	0.000041	0.73	11392.54	1715.34	0.04
Dry Creek	Lower	0.955 ARN-H	Max WS	Post Project_100yr	4663.36	26.90	40.94		40.94	0.000059	0.80	8906.09	1705.85	0.04
Dry Creek	Lower	0.955 ARN-H	Max WS	Post Project_50yr	3779.11	26.90	39.47		39.47	0.000059	0.71	6815.23	1391.33	0.04
Dry Creek	Lower	0.955 ARN-H	Max WS	Post Project_25yr	3057.89	26.90	38.11		38.12	0.000086	0.77	5293.12	1311.80	0.05
Dry Creek	Lower	0.955 ARN-H	Max WS	Post Project_10yr	1687.07	26.90	36.25		36.25	0.000123	0.76	3255.13	1173.37	0.06
Dry Creek	Lower	0.955 ARN-H	Max WS	Post Project_2yr	635.85	26.90	33.42		33.46	0.001323	1.92	568.23	549.53	0.18
Dry Creek	Lower	0.851	Max WS	Pre-Project_2yr_update	681.27	25.00	32.60		32.67	0.001764	2.41	375.97	631.03	0.21
Dry Creek	Lower	0.851	Max WS	Pre-Project_10yr_update	1971.96	25.00	36.21		36.22	0.000101	0.80	4129.74	1767.86	0.05
Dry Creek	Lower	0.851	Max WS	Pre-Project_25yr	3275.91	25.00	38.07		38.07	0.000062	0.73	6789.32	2009.89	0.04
Dry Creek	Lower	0.851	Max WS	Pre-Project_50yr_update	3909.48	25.00	39.44		39.44	0.000044	0.68	9575.91	2186.19	0.04
Dry Creek	Lower	0.851	Max WS	Pre-Project_100yr_update	4607.05	25.00	40.92		40.92	0.000024	0.55	12811.32	2190.44	0.03
Dry Creek	Lower	0.851	Max WS	Pre-Project_200yr_update	5601.37	25.00	42.38		42.38	0.000018	0.51	16014.05	2194.70	0.02
Dry Creek	Lower	0.851	Max WS	Pre-Project_500yr_update	7110.03	25.00	44.21		44.21	0.000014	0.49	20041.16	2201.06	0.02
Dry Creek	Lower	0.851	Max WS	Post Project_500yr	7346.92	25.00	44.21		44.21	0.000015	0.50	20045.14	2201.06	0.02
Dry Creek	Lower	0.851	Max WS	Post Project_200 yr	5775.01	25.00	42.38		42.38	0.000019	0.52	16018.32	2194.70	0.03
Dry Creek	Lower	0.851	Max WS	Post Project_100yr	4730.63	25.00	40.92		40.92	0.000026	0.57	12815.51	2190.45	0.03
Dry Creek	Lower	0.851	Max WS	Post Project_50yr	3978.92	25.00	39.44		39.44	0.000045	0.69	9580.39	2186.20	0.04
Dry Creek	Lower	0.851	Max WS	Post Project_25yr	3300.67	25.00	38.07		38.08	0.000063	0.74	6791.79	2010.63	0.04
Dry Creek	Lower	0.851	Max WS	Post Project_10yr	1931.89	25.00	36.19		36.19	0.000099	0.79	4098.02	1764.48	0.05
Dry Creek	Lower	0.851	Max WS	Post Project_2yr	664.97	25.00	32.58		32.65	0.001720	2.37	369.53	601.38	0.20
Dry Creek	Lower	0.85			Lat Struct									
Dry Creek	Lower	0.84			Lat Struct									
Dry Creek	Lower	0.743	Max WS	Pre-Project_2yr_update	646.12	25.74	32.22		32.23	0.000366	1.14	1054.97	845.86	0.09
Dry Creek	Lower	0.743	Max WS	Pre-Project_10yr_update	1971.28	25.74	36.19		36.20	0.000019	0.38	8471.82	2238.75	0.02
Dry Creek	Lower	0.743	Max WS	Pre-Project_25yr	3289.72	25.74	38.06		38.06	0.000014	0.38	12774.56	2350.19	0.02
Dry Creek	Lower	0.743	Max WS	Pre-Project_50yr_update	3908.67	25.74	39.43		39.43	0.000010	0.34	16001.50	2354.04	0.02
Dry Creek	Lower	0.743	Max WS	Pre-Project_100yr_update	4601.85	25.74	40.91		40.91	0.000007	0.31	19493.05	2358.48	0.02
Dry Creek	Lower	0.743	Max WS	Pre-Project_200yr_update	5568.83	25.74	42.37		42.38	0.000006	0.31	22944.14	2362.86	0.01
Dry Creek	Lower	0.743	Max WS	Pre-Project_500yr_update	6995.91	25.74	44.21		44.21	0.000005	0.32	27283.69	2372.06	0.01
Dry Creek	Lower	0.743	Max WS	Post Project_500yr	7248.76	25.74	44.21		44.21	0.000006	0.33	27288.48	2372.07	0.01
Dry Creek	Lower	0.743	Max WS	Post Project_200 yr	5747.97	25.74	42.38		42.38	0.000006	0.32	22949.15	2362.86	0.01
Dry Creek	Lower	0.743	Max WS	Post Project_100yr	4727.71	25.74	40.91		40.92	0.000007	0.32	19497.96	2358.49	0.02
Dry Creek	Lower	0.743	Max WS	Post Project_50yr	3977.38	25.74	39.43		39.43	0.000010	0.34	16006.58	2354.05	0.02
Dry Creek	Lower	0.743	Max WS	Post Project_25yr	3315.84	25.74	38.06		38.06	0.000015	0.38	12779.33	2350.19	0.02
Dry Creek	Lower	0.743	Max WS	Post Project_10yr	1930.20	25.74	36.17		36.17	0.000018	0.37	8421.82	2237.91	0.02
Dry Creek	Lower	0.743	Max WS	Post Project_2yr	639.27	25.74	32.20		32.21	0.000370	1.15	1040.79	839.79	0.09
Dry Creek	Lower	0.7242*	Max WS	Pre-Project_2yr_update	626.29	25.68	32.19		32.20	0.000318	1.00	1126.51	847.29	0.09
Dry Creek	Lower	0.7242*	Max WS	Pre-Project_10yr_update	1974.45	25.68	36.19		36.19	0.000018	0.35	8584.17	2189.71	0.02
Dry Creek	Lower	0.7242*	Max WS	Pre-Project_25yr	3301.68	25.68	38.06		38.06	0.000014	0.37	12734.04	2267.19	0.02
Dry Creek	Lower	0.7242*	Max WS	Pre-Project_50yr_update	3908.17	25.68	39.43		39.43	0.000010	0.34	15929.22	2377.66	0.02
Dry Creek	Lower	0.7242*	Max WS	Pre-Project_100yr_update	4601.06	25.68	40.91		40.91	0.000007	0.31	19456.24	2381.92	0.02
Dry Creek	Lower	0.7242*	Max WS	Pre-Project_200yr_update	5560.30	25.68	42.37		42.37	0.000006	0.31	22942.02	2386.98	0.01
Dry Creek	Lower	0.7242*	Max WS	Pre-Project_500yr_update	6965.14	25.68	44.21		44.21	0.000005	0.32	27327.49	2396.70	0.01
Dry Creek	Lower	0.7242*	Max WS	Post Project_500yr	7221.64	25.68	44.21		44.21	0.000006	0.33	27332.28	2396.71	0.01
Dry Creek	Lower	0.7242*	Max WS	Post Project_200 yr	5741.86	25.68	42.38		42.38	0.000006	0.32	22946.99	2386.99	0.02
Dry Creek	Lower	0.7242*	Max WS	Post Project_100yr	4727.12	25.68	40.91		40.92	0.000008	0.32	19461.13	2381.92	0.02
Dry Creek	Lower	0.7242*	Max WS	Post Project_50yr	3978.26	25.68	39.43		39.43	0.000010	0.34	15934.29	2377.67	0.02
Dry Creek	Lower	0.7242*	Max WS	Post Project_25yr	3328.85	25.68	38.06		38.06	0.000014	0.37	12738.56	2267.28	0.02
Dry Creek	Lower	0.7242*	Max WS	Post Project_10yr	1933.22	25.68	36.17		36.17	0.000017	0.35	8535.33	2188.78	0.02
Dry Creek	Lower	0.7242*	Max WS	Post Project_2yr	620.11	25.68	32.17		32.18	0.000322	1.00	1112.13	839.49	0.09
Dry Creek	Lower	0.7054*	Max WS	Pre-Project_2yr_update	611.23	25.61	32.15		32.16	0.000534	1.27	889.71	932.89	0.11
Dry Creek	Lower	0.7054*	Max WS	Pre-Project_10yr_update	1977.93	25.61	36.19		36.19	0.000018	0.37	8306.61	2088.15	0.02
Dry Creek	Lower	0.7054*	Max WS	Pre-Project_25yr	3315.12	25.61	38.06		38.06	0.000015	0.39	12334.71	2215.50	0.02
Dry Creek	Lower	0.7054*	Max WS	Pre-Project_50yr_update	3908.25	25.61	39.43		39.43	0.000011	0.36	15454.78	2345.11	0.02
Dry Creek	Lower	0.7054*	Max WS	Pre-Project_100yr_update	4600.42	25.61	40.91		40.91	0.000008	0.33	18967.02	2372.68	0.02
Dry Creek	Lower	0.7054*	Max WS	Pre-Project_200yr_update	5553.35	25.61	42.37		42.37	0.000006	0.32	22439.26	2377.05	0.02
Dry Creek	Lower	0.7054*	Max WS	Pre-Project_500yr_update	6936.66	25.61	44.21		44.21	0.000006	0.33	26805.40	2385.89	0.01
Dry Creek	Lower	0.7054*	Max WS	Post Project_500yr	7197.26	25.61	44.21		44.21	0.000006	0.34	26810.02	2385.90	0.02
Dry Creek	Lower	0.7054*	Max WS	Post Project_200 yr	5736.66	25.61	42.38		42.38	0.000007	0.33	22444.13	2377.06	0.02
Dry Creek	Lower	0.7054*	Max WS	Post Project_100yr	4726.73	25.61	40.91		40.91	0.000008	0.34	18971.82	2372.68	0.02
Dry Creek	Lower	0.7054*	Max WS	Post Project_50yr	3979.10	25.61	39.43		39.43	0.000011	0.36	15459.67	2345.25	0.02
Dry Creek	Lower	0.7054*	Max WS	Post Project_25yr	3343.39	25.61	38.06		38.06	0.000015	0.39	12339.07	2215.62	0.02
Dry Creek	Lower	0.7054*	Max WS	Post Project_10yr	1936.44	25.61	36.17		36.17	0.000018	0.36	8260.17	2085.57	0.02

Dry Creek	Lower	0.7054*	Max WS	Post Project_2yr	601.63	25.61	32.13		32.14	0.000533	1.27	874.21	909.32	0.11
Dry Creek	Lower	0.6866*	Max WS	Pre-Project_2yr_update	631.28	25.55	32.09		32.10	0.000694	1.45	798.94	859.40	0.13
Dry Creek	Lower	0.6866*	Max WS	Pre-Project_10yr_update	1983.78	25.55	36.19		36.19	0.000019	0.37	8292.59	2148.71	0.02
Dry Creek	Lower	0.6866*	Max WS	Pre-Project_25yr	3331.31	25.55	38.05		38.06	0.000015	0.38	12382.13	2241.59	0.02
Dry Creek	Lower	0.6866*	Max WS	Pre-Project_50yr_update	3908.21	25.55	39.43		39.43	0.000011	0.35	15554.16	2369.95	0.02
Dry Creek	Lower	0.6866*	Max WS	Pre-Project_100yr_update	4599.94	25.55	40.91		40.91	0.000008	0.32	19071.21	2374.51	0.02
Dry Creek	Lower	0.6866*	Max WS	Pre-Project_200yr_update	5547.74	25.55	42.37		42.37	0.000006	0.32	22546.50	2379.01	0.02
Dry Creek	Lower	0.6866*	Max WS	Pre-Project_500yr_update	6910.29	25.55	44.21		44.21	0.000005	0.32	26914.77	2386.17	0.01
Dry Creek	Lower	0.6866*	Max WS	Post Project_500yr	7174.51	25.55	44.21		44.21	0.000006	0.33	26919.33	2386.18	0.01
Dry Creek	Lower	0.6866*	Max WS	Post Project_200 yr	5733.78	25.55	42.37		42.38	0.000007	0.33	22551.30	2379.01	0.02
Dry Creek	Lower	0.6866*	Max WS	Post Project_100yr	4726.51	25.55	40.91		40.91	0.000008	0.33	19075.95	2374.52	0.02
Dry Creek	Lower	0.6866*	Max WS	Post Project_50yr	3978.29	25.55	39.43		39.43	0.000011	0.36	15559.04	2369.96	0.02
Dry Creek	Lower	0.6866*	Max WS	Post Project_25yr	3359.76	25.55	38.06		38.06	0.000016	0.39	12386.50	2241.66	0.02
Dry Creek	Lower	0.6866*	Max WS	Post Project_10yr	1941.18	25.55	36.17		36.17	0.000019	0.37	8244.89	2146.73	0.02
Dry Creek	Lower	0.6866*	Max WS	Post Project_2yr	617.51	25.55	32.07		32.09	0.000685	1.44	785.42	843.45	0.13
Dry Creek	Lower	0.6678*	Max WS	Pre-Project_2yr_update	677.65	25.54	32.04		32.05	0.000396	1.17	1168.45	1115.00	0.10
Dry Creek	Lower	0.6678*	Max WS	Pre-Project_10yr_update	1992.35	25.54	36.19		36.19	0.000015	0.34	9091.65	2247.52	0.02
Dry Creek	Lower	0.6678*	Max WS	Pre-Project_25yr	3349.03	25.54	38.05		38.05	0.000013	0.36	13373.11	2351.18	0.02

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Dry Creek	Lower	0.6678*	Max WS	Pre-Project_50yr_update	3908.34	25.54	39.43		39.43	0.000009	0.32	16631.94	2377.36	0.02
Dry Creek	Lower	0.6678*	Max WS	Pre-Project_100yr_update	4599.48	25.54	40.91		40.91	0.000006	0.30	20160.39	2381.78	0.01
Dry Creek	Lower	0.6678*	Max WS	Pre-Project_200yr_update	5541.18	25.54	42.37		42.37	0.000005	0.30	23646.39	2386.15	0.01
Dry Creek	Lower	0.6678*	Max WS	Pre-Project_500yr_update	6883.40	25.54	44.21		44.21	0.000005	0.30	28027.26	2391.62	0.01
Dry Creek	Lower	0.6678*	Max WS	Post Project_500yr	7154.77	25.54	44.21		44.21	0.000005	0.31	28031.76	2391.62	0.01
Dry Creek	Lower	0.6678*	Max WS	Post Project_200 yr	5727.81	25.54	42.37		42.38	0.000006	0.31	23651.10	2386.15	0.01
Dry Creek	Lower	0.6678*	Max WS	Post Project_100yr	4726.37	25.54	40.91		40.91	0.000007	0.31	20165.06	2381.79	0.02
Dry Creek	Lower	0.6678*	Max WS	Post Project_50yr	3978.28	25.54	39.43		39.43	0.000009	0.33	16636.78	2377.37	0.02
Dry Creek	Lower	0.6678*	Max WS	Post Project_25yr	3380.54	25.54	38.06		38.06	0.000013	0.36	13377.64	2351.31	0.02
Dry Creek	Lower	0.6678*	Max WS	Post Project_10yr	1948.61	25.54	36.17		36.17	0.000015	0.33	9041.81	2246.80	0.02
Dry Creek	Lower	0.6678*	Max WS	Post Project_2yr	660.87	25.54	32.03		32.04	0.000388	1.16	1151.85	1101.75	0.10
Dry Creek	Lower	0.649	Max WS	Pre-Project_2yr_update	720.04	25.61	32.01		32.02	0.000294	0.97	1383.45	1195.33	0.08
Dry Creek	Lower	0.649	Max WS	Pre-Project_10yr_update	1999.49	25.61	36.19		36.19	0.000013	0.31	9517.17	2292.65	0.02
Dry Creek	Lower	0.649	Max WS	Pre-Project_25yr	3363.57	25.61	38.05		38.05	0.000012	0.34	13932.29	2379.35	0.02
Dry Creek	Lower	0.649	Max WS	Pre-Project_50yr_update	3908.38	25.61	39.43		39.43	0.000008	0.30	17204.04	2383.29	0.02
Dry Creek	Lower	0.649	Max WS	Pre-Project_100yr_update	4599.22	25.61	40.91		40.91	0.000006	0.28	20741.58	2387.54	0.01
Dry Creek	Lower	0.649	Max WS	Pre-Project_200yr_update	5538.13	25.61	42.37		42.37	0.000005	0.28	24236.00	2391.74	0.01
Dry Creek	Lower	0.649	Max WS	Pre-Project_500yr_update	6867.20	25.61	44.21		44.21	0.000004	0.29	28627.82	2397.69	0.01
Dry Creek	Lower	0.649	Max WS	Post Project_500yr	7140.35	25.61	44.21		44.21	0.000005	0.30	28632.23	2397.69	0.01
Dry Creek	Lower	0.649	Max WS	Post Project_200 yr	5725.10	25.61	42.37		42.37	0.000005	0.29	24240.68	2391.75	0.01
Dry Creek	Lower	0.649	Max WS	Post Project_100yr	4726.53	25.61	40.91		40.91	0.000006	0.29	20746.21	2387.55	0.01
Dry Creek	Lower	0.649	Max WS	Post Project_50yr	3979.36	25.61	39.43		39.43	0.000008	0.31	17208.82	2383.29	0.02
Dry Creek	Lower	0.649	Max WS	Post Project_25yr	3394.95	25.61	38.05		38.06	0.000012	0.34	13936.86	2379.36	0.02
Dry Creek	Lower	0.649	Max WS	Post Project_10yr	1954.85	25.61	36.17		36.17	0.000013	0.31	9466.40	2290.88	0.02
Dry Creek	Lower	0.649	Max WS	Post Project_2yr	701.08	25.61	32.00		32.00	0.000286	0.96	1366.47	1182.43	0.08
Dry Creek	Lower	0.64			Lat Struct									
Dry Creek	Lower	0.59714*	Max WS	Pre-Project_2yr_update	668.24	25.26	31.98		31.98	0.000254	0.87	1403.98	1241.13	0.08
Dry Creek	Lower	0.59714*	Max WS	Pre-Project_10yr_update	1955.45	25.26	36.19		36.19	0.000012	0.29	9951.11	2403.87	0.02
Dry Creek	Lower	0.59714*	Max WS	Pre-Project_25yr	3362.48	25.26	38.05		38.05	0.000010	0.32	14471.07	2426.59	0.02
Dry Creek	Lower	0.59714*	Max WS	Pre-Project_50yr_update	3892.98	25.26	39.43		39.43	0.000007	0.29	17808.59	2430.31	0.02
Dry Creek	Lower	0.59714*	Max WS	Pre-Project_100yr_update	4558.29	25.26	40.91		40.91	0.000005	0.27	21416.22	2434.47	0.01
Dry Creek	Lower	0.59714*	Max WS	Pre-Project_200yr_update	5459.81	25.26	42.37		42.37	0.000005	0.27	24980.71	2440.90	0.01
Dry Creek	Lower	0.59714*	Max WS	Pre-Project_500yr_update	6729.98	25.26	44.21		44.21	0.000004	0.28	29465.86	2449.95	0.01
Dry Creek	Lower	0.59714*	Max WS	Post Project_500yr	7010.73	25.26	44.21		44.21	0.000004	0.29	29470.32	2449.96	0.01
Dry Creek	Lower	0.59714*	Max WS	Post Project_200 yr	5654.92	25.26	42.37		42.37	0.000005	0.28	24985.41	2440.91	0.01
Dry Creek	Lower	0.59714*	Max WS	Post Project_100yr	4690.57	25.26	40.91		40.91	0.000006	0.28	21420.88	2434.48	0.01
Dry Creek	Lower	0.59714*	Max WS	Post Project_50yr	3966.52	25.26	39.43		39.43	0.000007	0.29	17813.38	2430.31	0.02
Dry Creek	Lower	0.59714*	Max WS	Post Project_25yr	3394.50	25.26	38.05		38.05	0.000011	0.32	14475.66	2426.60	0.02
Dry Creek	Lower	0.59714*	Max WS	Post Project_10yr	1910.38	25.26	36.16		36.16	0.000011	0.29	9898.01	2400.60	0.02
Dry Creek	Lower	0.59714*	Max WS	Post Project_2yr	651.33	25.26	31.96		31.97	0.000248	0.86	1387.45	1218.69	0.08
Dry Creek	Lower	0.57985*	Max WS	Pre-Project_2yr_update	662.04	24.98	31.94		31.95	0.000339	1.07	1298.78	1450.67	0.09
Dry Creek	Lower	0.57985*	Max WS	Pre-Project_10yr_update	1920.96	24.98	36.19		36.19	0.000009	0.27	10896.74	2541.82	0.02
Dry Creek	Lower	0.57985*	Max WS	Pre-Project_25yr	3362.62	24.98	38.05		38.05	0.000009	0.30	15644.42	2547.48	0.02
Dry Creek	Lower	0.57985*	Max WS	Pre-Project_50yr_update	3880.77	24.98	39.43		39.43	0.000006	0.27	19149.06	2551.65	0.01
Dry Creek	Lower	0.57985*	Max WS	Pre-Project_100yr_update	4522.65	24.98	40.91		40.91	0.000004	0.25	22937.40	2556.15	0.01
Dry	Lower	0.57985*	Max	Pre-	5390.32	24.98	42.37		42.37	0.000004	0.25	26678.96	2560.59	0.01

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Creek			WS	Project_200yr_update										
Dry Creek	Lower	0.57985*	Max WS	Pre-Project_500yr_update	6608.65	24.98	44.21		44.21	0.000003	0.26	31382.93	2569.33	0.01
Dry Creek	Lower	0.57985*	Max WS	Post Project_500yr	6896.90	24.98	44.21		44.21	0.000004	0.27	31387.52	2569.34	0.01
Dry Creek	Lower	0.57985*	Max WS	Post Project_200 yr	5589.79	24.98	42.37		42.37	0.000004	0.26	26683.81	2560.59	0.01
Dry Creek	Lower	0.57985*	Max WS	Post Project_100yr	4659.35	24.98	40.91		40.91	0.000005	0.26	22942.26	2556.16	0.01
Dry Creek	Lower	0.57985*	Max WS	Post Project_50yr	3955.63	24.98	39.43		39.43	0.000006	0.27	19154.07	2551.66	0.01
Dry Creek	Lower	0.57985*	Max WS	Post Project_25yr	3394.21	24.98	38.05		38.05	0.000009	0.30	15649.21	2547.49	0.02
Dry Creek	Lower	0.57985*	Max WS	Post Project_10yr	1875.86	24.98	36.16		36.16	0.000009	0.26	10840.61	2541.75	0.02
Dry Creek	Lower	0.57985*	Max WS	Post Project_2yr	646.24	24.98	31.93		31.93	0.000333	1.06	1280.23	1442.10	0.09
Dry Creek	Lower	0.528	Max WS	Pre-Project_2yr_update	632.53	24.66	31.92		31.92	0.000283	1.00	1577.50	2056.10	0.08
Dry Creek	Lower	0.528	Max WS	Pre-Project_10yr_update	1900.53	24.66	36.18		36.19	0.000006	0.22	12649.04	2741.53	0.01
Dry Creek	Lower	0.528	Max WS	Pre-Project_25yr	3362.04	24.66	38.05		38.05	0.000006	0.25	17769.79	2747.58	0.01
Dry Creek	Lower	0.528	Max WS	Pre-Project_50yr_update	3873.72	24.66	39.43		39.43	0.000004	0.23	21550.07	2752.05	0.01
Dry Creek	Lower	0.528	Max WS	Pre-Project_100yr_update	4500.82	24.66	40.91		40.91	0.000003	0.22	25636.11	2756.86	0.01
Dry Creek	Lower	0.528	Max WS	Pre-Project_200yr_update	5348.06	24.66	42.37		42.37	0.000003	0.22	29671.54	2761.61	0.01
Dry Creek	Lower	0.528	Max WS	Pre-Project_500yr_update	6530.61	24.66	44.21		44.21	0.000003	0.23	34744.06	2770.13	0.01
Dry Creek	Lower	0.528	Max WS	Post Project_500yr	6823.73	24.66	44.21		44.21	0.000003	0.24	34749.00	2770.14	0.01
Dry Creek	Lower	0.528	Max WS	Post Project_200 yr	5552.15	24.66	42.37		42.37	0.000003	0.23	29676.72	2761.62	0.01
Dry Creek	Lower	0.528	Max WS	Post Project_100yr	4640.51	24.66	40.91		40.91	0.000004	0.23	25641.32	2756.87	0.01
Dry Creek	Lower	0.528	Max WS	Post Project_50yr	3950.85	24.66	39.43		39.43	0.000005	0.24	21555.44	2752.05	0.01
Dry Creek	Lower	0.528	Max WS	Post Project_25yr	3394.66	24.66	38.05		38.05	0.000006	0.26	17774.96	2747.59	0.01
Dry Creek	Lower	0.528	Max WS	Post Project_10yr	1854.45	24.66	36.16		36.16	0.000006	0.21	12588.56	2741.45	0.01
Dry Creek	Lower	0.528	Max WS	Post Project_2yr	618.27	24.66	31.90		31.91	0.000281	0.99	1551.68	2046.68	0.08
Dry Creek	Lower	0.409	Max WS	Pre-Project_2yr_update	597.18	23.97	31.88		31.89	0.000096	0.57	2343.83	2207.06	0.05
Dry Creek	Lower	0.409	Max WS	Pre-Project_10yr_update	1889.16	23.97	36.18		36.18	0.000006	0.22	12350.11	2486.73	0.01
Dry Creek	Lower	0.409	Max WS	Pre-Project_25yr	3361.91	23.97	38.05		38.05	0.000006	0.26	16998.56	2500.30	0.01
Dry Creek	Lower	0.409	Max WS	Pre-Project_50yr_update	3868.91	23.97	39.42		39.43	0.000005	0.24	20441.51	2507.43	0.01
Dry Creek	Lower	0.409	Max WS	Pre-Project_100yr_update	4487.75	23.97	40.91		40.91	0.000004	0.23	24167.09	2514.98	0.01
Dry Creek	Lower	0.409	Max WS	Pre-Project_200yr_update	5322.40	23.97	42.37		42.37	0.000003	0.23	27850.77	2522.41	0.01
Dry Creek	Lower	0.409	Max WS	Pre-Project_500yr_update	6484.22	23.97	44.20		44.21	0.000003	0.24	32486.35	2531.73	0.01
Dry Creek	Lower	0.409	Max WS	Post Project_500yr	6782.55	23.97	44.21		44.21	0.000003	0.25	32490.75	2531.74	0.01
Dry Creek	Lower	0.409	Max WS	Post Project_200 yr	5528.13	23.97	42.37		42.37	0.000003	0.24	27855.44	2522.42	0.01
Dry Creek	Lower	0.409	Max WS	Post Project_100yr	4629.76	23.97	40.91		40.91	0.000004	0.24	24171.76	2514.98	0.01
Dry Creek	Lower	0.409	Max WS	Post Project_50yr	3946.25	23.97	39.43		39.43	0.000005	0.25	20446.33	2507.44	0.01
Dry Creek	Lower	0.409	Max WS	Post Project_25yr	3394.50	23.97	38.05		38.05	0.000006	0.27	17003.21	2500.31	0.01
Dry Creek	Lower	0.409	Max WS	Post Project_10yr	1842.23	23.97	36.16		36.16	0.000006	0.22	12295.38	2486.56	0.01
Dry Creek	Lower	0.409	Max WS	Post Project_2yr	583.64	23.97	31.87		31.87	0.000095	0.57	2317.11	2204.31	0.05
Dry Creek	Lower	0.4			Lat Struct									
Dry Creek	Lower	0.323	Max WS	Pre-Project_2yr_update	586.81	23.97	31.85		31.85	0.000213	0.74	1646.08	1843.44	0.07
Dry Creek	Lower	0.323	Max WS	Pre-Project_10yr_update	1886.04	23.97	36.18		36.18	0.000010	0.28	9030.44	2101.84	0.02
Dry Creek	Lower	0.323	Max WS	Pre-Project_25yr	3361.03	23.97	38.05		38.05	0.000012	0.34	12275.96	2140.29	0.02
Dry Creek	Lower	0.323	Max WS	Pre-Project_50yr_update	3867.70	23.97	39.42		39.42	0.000008	0.32	14669.50	2187.80	0.02
Dry Creek	Lower	0.323	Max WS	Pre-Project_100yr_update	4483.93	23.97	40.91		40.91	0.000007	0.33	17668.41	2204.35	0.02
Dry Creek	Lower	0.323	Max WS	Pre-Project_200yr_update	5314.28	23.97	42.37		42.37	0.000006	0.32	20896.48	2209.51	0.02
Dry Creek	Lower	0.323	Max WS	Pre-Project_500yr_update	6470.00	23.97	44.20		44.20	0.000005	0.32	24956.06	2215.99	0.01
Dry Creek	Lower	0.323	Max WS	Post Project_500yr	6768.04	23.97	44.21		44.21	0.000006	0.34	24959.66	2215.99	0.01
Dry Creek	Lower	0.323	Max WS	Post Project_200 yr	5520.76	23.97	42.37		42.37	0.000007	0.33	20900.31	2209.52	0.02
Dry Creek	Lower	0.323	Max WS	Post Project_100yr	4625.98	23.97	40.91		40.91	0.000008	0.34	17672.30	2204.35	0.02
Dry Creek	Lower	0.323	Max WS	Post Project_50yr	3944.76	23.97	39.42		39.43	0.000009	0.33	14672.70	2187.82	0.02
Dry Creek	Lower	0.323	Max WS	Post Project_25yr	3393.52	23.97	38.05		38.05	0.000012	0.35	12279.11	2140.34	0.02
Dry Creek	Lower	0.323	Max WS	Post Project_10yr	1839.76	23.97	36.16		36.16	0.000010	0.27	8992.23	2101.18	0.02
Dry Creek	Lower	0.323	Max WS	Post Project_2yr	573.30	23.97	31.83		31.84	0.000211	0.74	1626.47	1841.81	0.07
Dry Creek	Lower	0.266	Max WS	Pre-Project_2yr_update	580.68	24.00	31.80		31.81	0.000174	0.87	1517.45	1473.68	0.07

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Dry Creek	Lower	0.266	Max WS	Pre-Project_10yr_update	1883.43	24.00	36.18		36.18	0.000013	0.36	7915.29	2048.26	0.02
Dry Creek	Lower	0.266	Max WS	Pre-Project_25yr	3361.39	24.00	38.04		38.05	0.000015	0.43	10879.41	2071.06	0.02
Dry Creek	Lower	0.266	Max WS	Pre-Project_50yr_update	3865.61	24.00	39.42		39.42	0.000011	0.40	13067.96	2075.58	0.02
Dry Creek	Lower	0.266	Max WS	Pre-Project_100yr_update	4479.72	24.00	40.90		40.91	0.000009	0.39	15870.62	2082.05	0.02
Dry Creek	Lower	0.266	Max WS	Pre-Project_200yr_update	5304.55	24.00	42.37		42.37	0.000008	0.38	18922.38	2089.96	0.02
Dry Creek	Lower	0.266	Max WS	Pre-Project_500yr_update	6453.45	24.00	44.20		44.20	0.000006	0.38	22766.57	2099.87	0.02
Dry Creek	Lower	0.266	Max WS	Post Project_500yr	6750.28	24.00	44.20		44.21	0.000007	0.39	22769.68	2099.88	0.02
Dry Creek	Lower	0.266	Max WS	Post Project_200 yr	5514.50	24.00	42.37		42.37	0.000008	0.40	18925.72	2089.97	0.02
Dry Creek	Lower	0.266	Max WS	Post Project_100yr	4622.67	24.00	40.91		40.91	0.000010	0.41	15874.05	2082.06	0.02
Dry Creek	Lower	0.266	Max WS	Post Project_50yr	3942.66	24.00	39.42		39.42	0.000011	0.41	13070.75	2075.58	0.02
Dry Creek	Lower	0.266	Max WS	Post Project_25yr	3393.02	24.00	38.05		38.05	0.000015	0.44	10882.19	2071.07	0.02
Dry	Lower	0.266	Max	Post Project_10yr	1836.99	24.00	36.16		36.16	0.000012	0.35	7880.67	2047.47	0.02

Creek			WS											
Dry Creek	Lower	0.266	Max WS	Post Project_2yr	567.23	24.00	31.79		31.79	0.000170	0.86	1502.27	1472.42	0.07
Dry Creek	Lower	0.2175*	Max WS	Pre-Project_2yr_update	586.23	23.65	31.77		31.78	0.000102	0.72	1723.94	1279.59	0.05
Dry Creek	Lower	0.2175*	Max WS	Pre-Project_10yr_update	1877.38	23.65	36.18		36.18	0.000014	0.39	7400.94	1974.63	0.02
Dry Creek	Lower	0.2175*	Max WS	Pre-Project_25yr	3360.31	23.65	38.04		38.04	0.000016	0.47	10229.04	1981.98	0.02
Dry Creek	Lower	0.2175*	Max WS	Pre-Project_50yr_update	3862.61	23.65	39.42		39.42	0.000012	0.43	12318.35	1986.77	0.02
Dry Creek	Lower	0.2175*	Max WS	Pre-Project_100yr_update	4465.61	23.65	40.90		40.90	0.000009	0.41	14570.43	1993.99	0.02
Dry Creek	Lower	0.2175*	Max WS	Pre-Project_200yr_update	5271.66	23.65	42.37		42.37	0.000008	0.41	16789.92	2001.60	0.02
Dry Creek	Lower	0.2175*	Max WS	Pre-Project_500yr_update	6380.42	23.65	44.20		44.20	0.000007	0.41	19574.00	2012.02	0.02
Dry Creek	Lower	0.2175*	Max WS	Post Project_500yr	6685.78	23.65	44.20		44.20	0.000008	0.43	19576.00	2012.03	0.02
Dry Creek	Lower	0.2175*	Max WS	Post Project_200 yr	5483.59	23.65	42.37		42.37	0.000009	0.42	16792.12	2001.61	0.02
Dry Creek	Lower	0.2175*	Max WS	Post Project_100yr	4611.49	23.65	40.90		40.91	0.000010	0.42	14572.75	1994.00	0.02
Dry Creek	Lower	0.2175*	Max WS	Post Project_50yr	3941.45	23.65	39.42		39.42	0.000013	0.44	12320.84	1986.78	0.02
Dry Creek	Lower	0.2175*	Max WS	Post Project_25yr	3392.69	23.65	38.04		38.04	0.000017	0.47	10231.60	1981.98	0.02
Dry Creek	Lower	0.2175*	Max WS	Post Project_10yr	1830.35	23.65	36.15		36.16	0.000014	0.38	7367.91	1974.51	0.02
Dry Creek	Lower	0.2175*	Max WS	Post Project_2yr	572.26	23.65	31.76		31.77	0.000099	0.71	1711.97	1279.17	0.05
Dry Creek	Lower	0.217			Lat Struct									
Dry Creek	Lower	0.169	Max WS	Pre-Project_2yr_update	562.10	23.53	31.76		31.76	0.000054	0.57	1717.11	1243.38	0.04
Dry Creek	Lower	0.169	Max WS	Pre-Project_10yr_update	1830.79	23.53	36.17		36.17	0.000021	0.50	6578.97	1881.87	0.03
Dry Creek	Lower	0.169	Max WS	Pre-Project_25yr	3360.14	23.53	38.04		38.04	0.000022	0.57	9486.44	1901.92	0.03
Dry Creek	Lower	0.169	Max WS	Pre-Project_50yr_update	3841.87	23.53	39.41		39.42	0.000015	0.51	11637.35	1919.32	0.02
Dry Creek	Lower	0.169	Max WS	Pre-Project_100yr_update	4409.06	23.53	40.90		40.90	0.000011	0.46	13954.65	1933.72	0.02
Dry Creek	Lower	0.169	Max WS	Pre-Project_200yr_update	5161.83	23.53	42.36		42.37	0.000009	0.45	16237.59	1948.06	0.02
Dry Creek	Lower	0.169	Max WS	Pre-Project_500yr_update	6180.15	23.53	44.20		44.20	0.000008	0.44	19101.44	1967.74	0.02
Dry Creek	Lower	0.169	Max WS	Post Project_500yr	6497.52	23.53	44.20		44.20	0.000009	0.46	19103.20	1967.75	0.02
Dry Creek	Lower	0.169	Max WS	Post Project_200 yr	5383.84	23.53	42.36		42.37	0.000010	0.47	16239.58	1948.07	0.02
Dry Creek	Lower	0.169	Max WS	Post Project_100yr	4562.58	23.53	40.90		40.90	0.000012	0.48	13956.79	1933.73	0.02
Dry Creek	Lower	0.169	Max WS	Post Project_50yr	3922.58	23.53	39.42		39.42	0.000016	0.52	11639.71	1919.33	0.02
Dry Creek	Lower	0.169	Max WS	Post Project_25yr	3391.73	23.53	38.04		38.04	0.000023	0.58	9488.94	1901.94	0.03
Dry Creek	Lower	0.169	Max WS	Post Project_10yr	1781.32	23.53	36.15		36.15	0.000020	0.49	6545.28	1881.64	0.03
Dry Creek	Lower	0.169	Max WS	Post Project_2yr	547.10	23.53	31.75		31.75	0.000052	0.56	1709.45	1242.91	0.04
Dry Creek	Lower	0.1215*	Max WS	Pre-Project_2yr_update	562.92	23.30	31.74		31.74	0.000093	0.70	1400.34	1622.13	0.05
Dry Creek	Lower	0.1215*	Max WS	Pre-Project_10yr_update	1809.12	23.30	36.16		36.17	0.000036	0.63	5207.95	1820.21	0.03
Dry Creek	Lower	0.1215*	Max WS	Pre-Project_25yr	3359.08	23.30	38.03		38.03	0.000033	0.68	8341.30	1829.29	0.03
Dry Creek	Lower	0.1215*	Max WS	Pre-Project_50yr_update	3821.64	23.30	39.41		39.41	0.000020	0.57	10663.47	1836.01	0.03
Dry Creek	Lower	0.1215*	Max WS	Pre-Project_100yr_update	4359.36	23.30	40.90		40.90	0.000014	0.50	13162.87	1843.25	0.02
Dry Creek	Lower	0.1215*	Max WS	Pre-Project_200yr_update	5057.02	23.30	42.36		42.36	0.000011	0.47	15623.90	1850.38	0.02
Dry Creek	Lower	0.1215*	Max WS	Pre-Project_500yr_update	5966.76	23.30	44.20		44.20	0.000008	0.44	18711.12	1859.69	0.02
Dry Creek	Lower	0.1215*	Max WS	Post Project_500yr	6302.98	23.30	44.20		44.20	0.000009	0.47	18712.67	1859.69	0.02
Dry Creek	Lower	0.1215*	Max WS	Post Project_200 yr	5291.51	23.30	42.36		42.36	0.000012	0.49	15625.66	1850.38	0.02
Dry Creek	Lower	0.1215*	Max WS	Post Project_100yr	4520.95	23.30	40.90		40.90	0.000015	0.52	13164.82	1843.26	0.02
Dry Creek	Lower	0.1215*	Max WS	Post Project_50yr	3909.08	23.30	39.41		39.41	0.000021	0.58	10665.65	1836.02	0.03
Dry Creek	Lower	0.1215*	Max WS	Post Project_25yr	3391.46	23.30	38.03		38.03	0.000034	0.68	8343.79	1829.29	0.03
Dry Creek	Lower	0.1215*	Max WS	Post Project_10yr	1757.89	23.30	36.14		36.15	0.000034	0.61	5172.13	1820.11	0.03
Dry Creek	Lower	0.1215*	Max WS	Post Project_2yr	546.85	23.30	31.73		31.73	0.000089	0.68	1393.97	1621.68	0.05
Dry Creek	Lower	0.074	Max WS	Pre-Project_2yr_update	621.53	23.10	31.70		31.71	0.000214	1.09	763.47	1655.45	0.08
Dry Creek	Lower	0.074	Max WS	Pre-Project_10yr_update	1810.15	23.10	36.13		36.16	0.000255	1.71	2062.29	1673.28	0.09
Dry Creek	Lower	0.074	Max WS	Pre-Project_25yr	3364.72	23.10	38.01		38.02	0.000134	1.38	5132.49	1681.21	0.07
Dry Creek	Lower	0.074	Max WS	Pre-Project_50yr_update	3777.04	23.10	39.40		39.41	0.000060	0.99	7407.92	1685.78	0.05
Dry Creek	Lower	0.074	Max WS	Pre-Project_100yr_update	4336.95	23.10	40.89		40.89	0.000033	0.79	9843.20	1691.80	0.04
Dry Creek	Lower	0.074	Max WS	Pre-Project_200yr_update	5000.23	23.10	42.36		42.36	0.000022	0.69	12236.90	1697.71	0.03
Dry Creek	Lower	0.074	Max WS	Pre-Project_500yr_update	5832.10	23.10	44.19		44.20	0.000015	0.60	15238.33	1704.78	0.02
Dry Creek	Lower	0.074	Max WS	Post Project_500yr	6179.18	23.10	44.20		44.20	0.000017	0.64	15239.25	1704.78	0.03
Dry Creek	Lower	0.074	Max WS	Post Project_200 yr	5242.70	23.10	42.36		42.36	0.000024	0.72	12237.91	1697.72	0.03
Dry Creek	Lower	0.074	Max WS	Post Project_100yr	4503.16	23.10	40.89		40.90	0.000036	0.82	9844.36	1691.80	0.04
Dry Creek	Lower	0.074	Max WS	Post Project_50yr	3859.73	23.10	39.40		39.41	0.000062	1.01	7409.22	1685.78	0.05
Dry Creek	Lower	0.074	Max WS	Post Project_25yr	3398.11	23.10	38.01		38.02	0.000136	1.39	5134.18	1681.22	0.07
Dry Creek	Lower	0.074	Max WS	Post Project_10yr	1757.68	23.10	36.11		36.14	0.000245	1.67	2033.26	1673.21	0.09
Dry Creek	Lower	0.074	Max WS	Post Project_2yr	599.81	23.10	31.69		31.70	0.000201	1.05	761.75	1655.42	0.08
Dry Creek	Lower	0.064	Max WS	Pre-Project_2yr_update	621.52	23.00	31.68	26.72	31.70	0.000267	1.27	581.74	1608.38	0.09
Dry Creek	Lower	0.064	Max WS	Pre-Project_10yr_update	1809.97	23.00	36.06	28.52	36.15	0.000568	2.62	1233.76	1663.82	0.14
Dry Creek	Lower	0.064	Max WS	Pre-Project_25yr	3354.86	23.00	37.99	29.96	38.01	0.000220	1.82	4316.34	1673.00	0.09
Dry Creek	Lower	0.064	Max WS	Pre-Project_50yr_update	3776.97	23.00	39.39	30.24	39.40	0.000086	1.22	6563.49	1678.23	0.06
Dry Creek	Lower	0.064	Max WS	Pre-Project_100yr_update	4336.79	23.00	40.89	30.60	40.89	0.000044	0.93	8954.87	1683.53	0.04
Dry Creek	Lower	0.064	Max WS	Pre-Project_200yr_update	4982.74	23.00	42.35	30.85	42.36	0.000028	0.79	11302.19	1688.72	0.03
Dry Creek	Lower	0.064	Max WS	Pre-Project_500yr_update	5832.45	23.00	44.19	31.49	44.20	0.000018	0.68	14244.26	1695.64	0.03
Dry Creek	Lower	0.064	Max WS	Post Project_500yr	6178.75	23.00	44.19	31.65	44.20	0.000021	0.72	14244.87	1695.64	0.03
Dry	Lower	0.064	Max	Post Project_200 yr	5222.43	23.00	42.35	31.19	42.36	0.000031	0.83	11302.80	1688.72	0.04

Creek			WS											
Dry Creek	Lower	0.064	Max WS	Post Project_100yr	4502.38	23.00	40.89	30.70	40.89	0.000048	0.97	8955.57	1683.53	0.04
Dry Creek	Lower	0.064	Max WS	Post Project_50yr	3859.66	23.00	39.39	30.29	39.40	0.000090	1.25	6564.29	1678.24	0.06
Dry Creek	Lower	0.064	Max WS	Post Project_25yr	3385.05	23.00	37.99	29.98	38.01	0.000224	1.83	4317.45	1673.01	0.09
Dry Creek	Lower	0.064	Max WS	Post Project_10yr	1754.28	23.00	36.05	28.46	36.14	0.000541	2.55	1213.86	1663.77	0.14
Dry Creek	Lower	0.064	Max WS	Post Project_2yr	599.55	23.00	31.67	26.65	31.69	0.000250	1.23	581.04	1608.31	0.09
Dry Creek	Lower	0.059 UPRR			Bridge									
Dry Creek	Lower	0.054	Max WS	Pre-Project_2yr_update	621.52	22.90	31.59		31.64	0.000534	1.66	384.16	1431.68	0.12
Dry Creek	Lower	0.054	Max WS	Pre-Project_10yr_update	1736.49	22.90	35.49		35.59	0.000653	2.59	712.05	1531.73	0.15
Dry Creek	Lower	0.054	Max WS	Pre-Project_25yr	3354.07	22.90	37.94		37.97	0.000300	2.04	3739.07	1551.12	0.10
Dry Creek	Lower	0.054	Max WS	Pre-Project_50yr_update	3776.97	22.90	39.37		39.39	0.000109	1.32	5952.21	1564.66	0.06
Dry Creek	Lower	0.054	Max WS	Pre-Project_100yr_update	4336.79	22.90	40.88		40.88	0.000054	0.99	8268.69	1672.43	0.05
Dry Creek	Lower	0.054	Max WS	Pre-Project_200yr_update	4927.22	22.90	42.35		42.35	0.000033	0.82	10531.31	1680.08	0.04
Dry Creek	Lower	0.054	Max WS	Pre-Project_500yr_update	5832.45	22.90	44.19		44.19	0.000021	0.72	13365.32	1687.88	0.03
Dry Creek	Lower	0.054	Max WS	Post Project_500yr	6178.75	22.90	44.19		44.19	0.000024	0.76	13365.38	1687.88	0.03
Dry Creek	Lower	0.054	Max WS	Post Project_200 yr	5163.34	22.90	42.35		42.35	0.000036	0.86	10531.38	1680.08	0.04
Dry Creek	Lower	0.054	Max WS	Post Project_100yr	4502.38	22.90	40.88		40.89	0.000058	1.03	8268.77	1672.43	0.05
Dry Creek	Lower	0.054	Max WS	Post Project_50yr	3859.66	22.90	39.37		39.39	0.000114	1.35	5952.28	1564.66	0.06
Dry Creek	Lower	0.054	Max WS	Post Project_25yr	3379.57	22.90	37.94		37.97	0.000305	2.05	3739.14	1551.12	0.10
Dry Creek	Lower	0.054	Max WS	Post Project_10yr	1687.90	22.90	35.49		35.58	0.000616	2.51	712.18	1531.74	0.14
Dry Creek	Lower	0.054	Max WS	Post Project_2yr	599.55	22.90	31.59		31.63	0.000497	1.61	384.20	1431.71	0.12

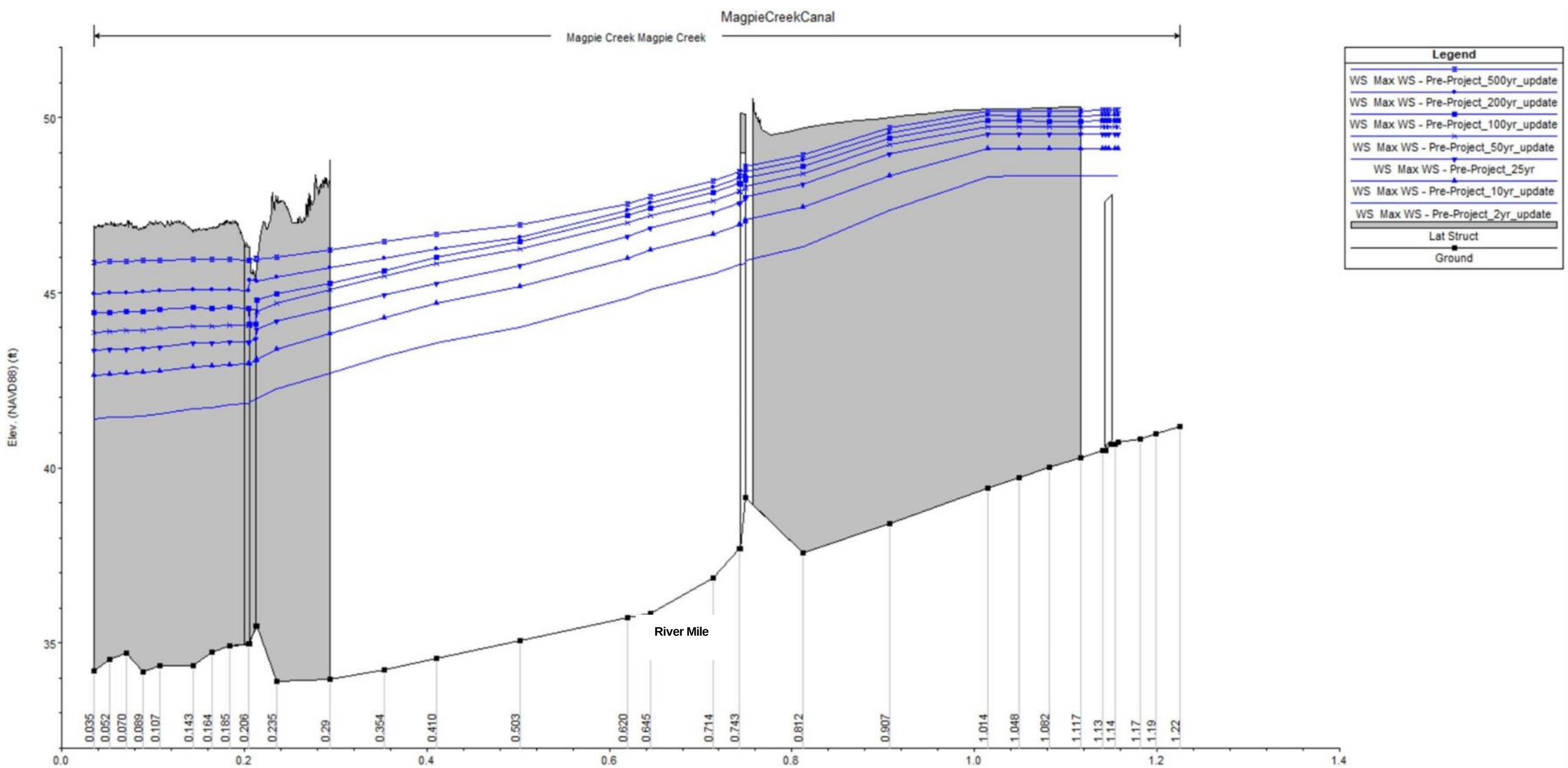

Figure 2. Profile Plot of WSE for Pre-Project Conditions

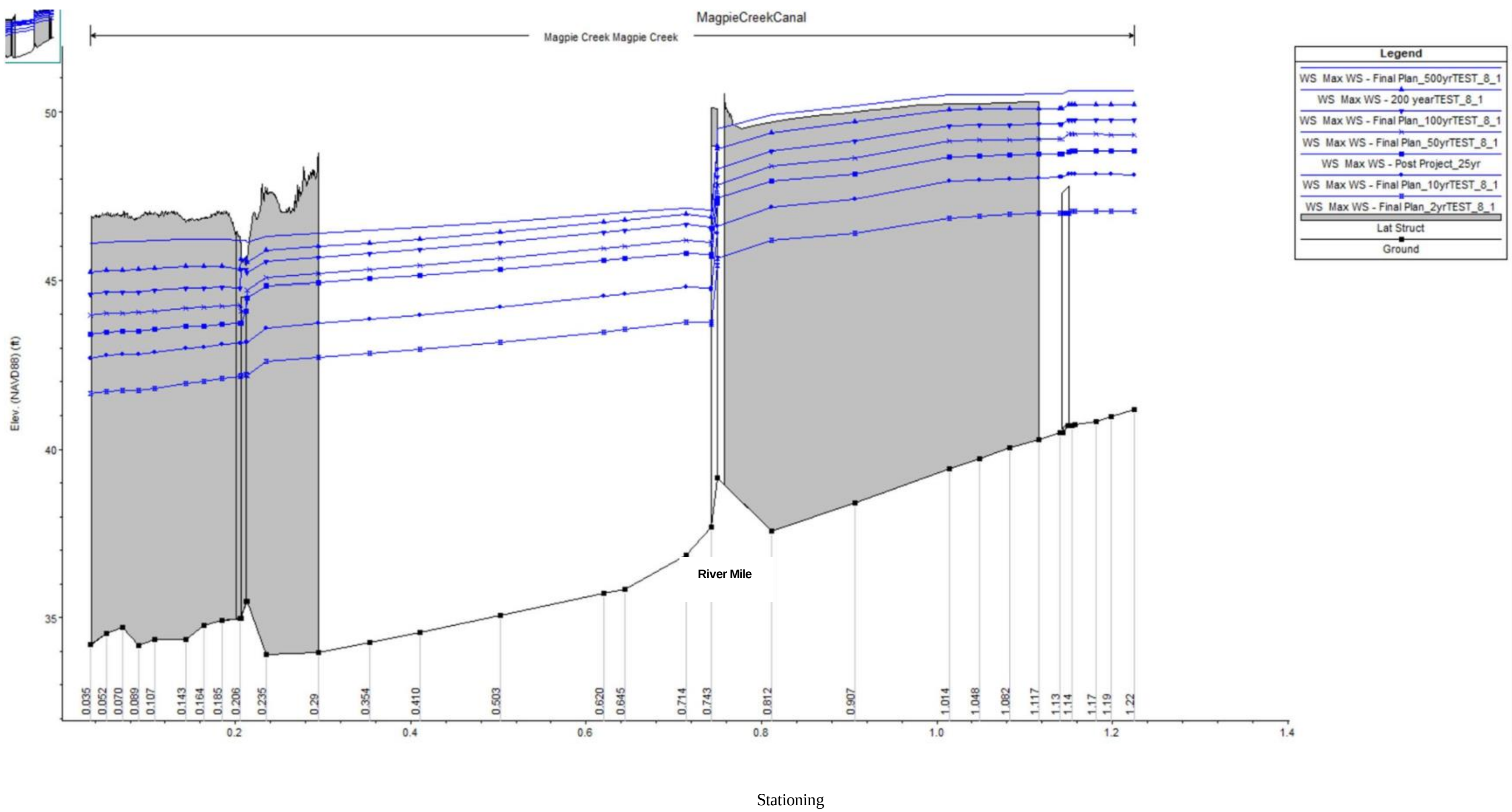

Figure 3. Profile Plot of WSE for Post-Project Conditions

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APPENDIX D

LEVEE AND CULVERT DESIGN

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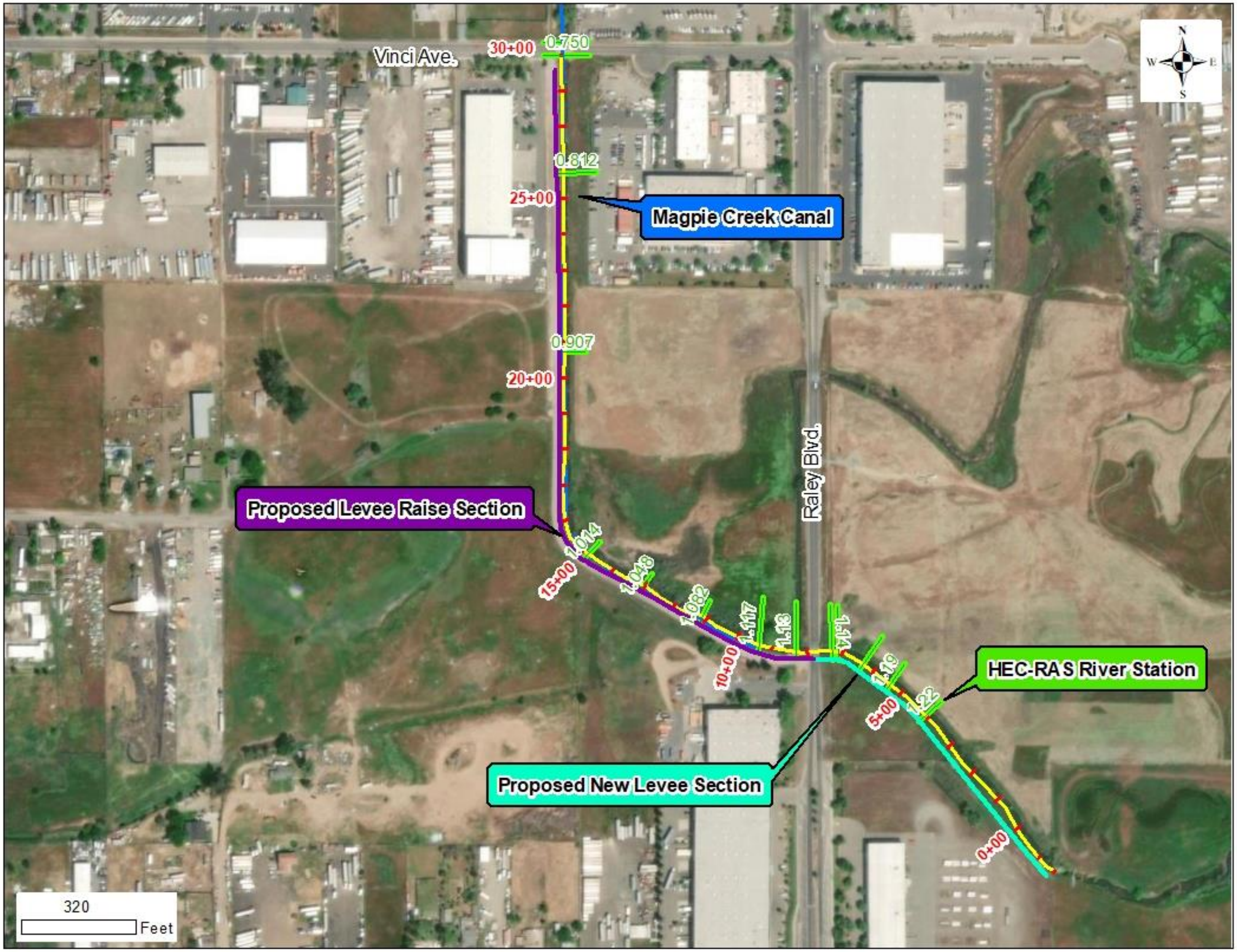

Figure 1: Levee Design Stationing
Plan View

Table 1: Levee Design - 0.5% (200 year) AEP Post-Project Water Surface Elevations

Station	WSE
0+00	50.20
1+00	50.17
2+00	50.16
3+00	50.15
4+00	50.14
5+00	50.14
6+00	50.15
7+00	50.15
8+00	50.11
9+00	50.06
10+00	50.05
11+00	50.05
12+00	50.05
13+00	50.04
14+00	50.04
15+00	50.04
16+00	50.00
17+00	49.95
18+00	49.89
19+00	49.83
20+00	49.77
21+00	49.72
22+00	49.65
23+00	49.58
24+00	49.51
25+00	49.44
26+00	49.37
27+00	49.23
28+00	49.08
29+00	48.92
30+00	48.86

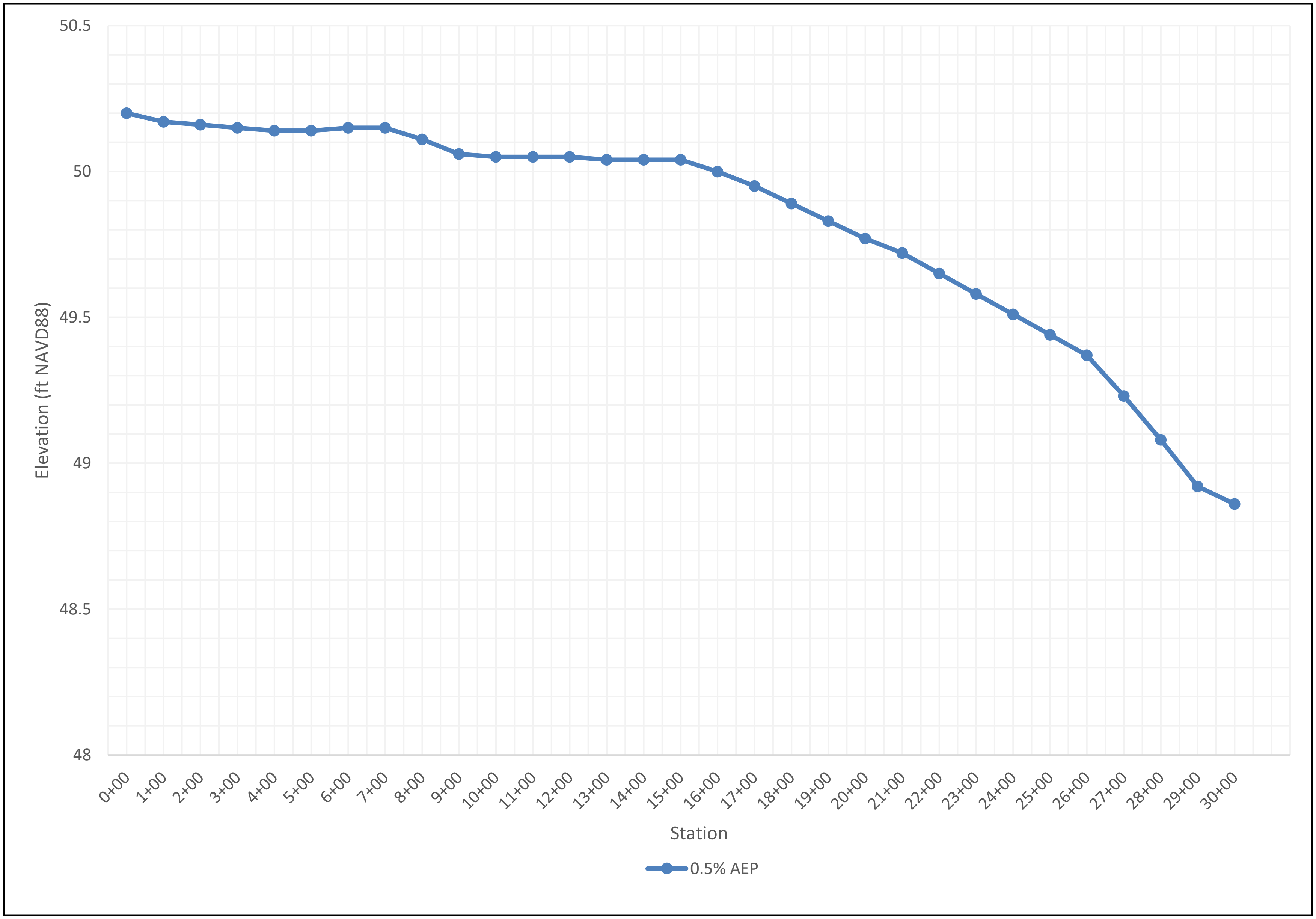

Figure 2: 0.5% (200 yr) Post Project AEP Water Surface Elevation Profile View

Table 2: 0.5% (200-yr) Post Project AEP Water Surface Elevations – HEC-RAS Stationing

HEC-RAS River Station	0.5% (200-yr) AEP Post Project Elevations
	DWSE (ft NAVD88)
*Area upstream Raley Blvd. modeled with 2D Flow Area	
Raley Blvd.	
1.22	50.14
1.19	50.15
1.17	50.15
1.15	50.15
1.14	50.15
1.13	50.06
1.117	50.06
1.082	50.05
1.048	50.04
1.014	50.04
0.907	49.70
0.812	49.36
0.750	48.84
0.746 Vinci Ave.	

Figure 3. Arial View of Culvert Design

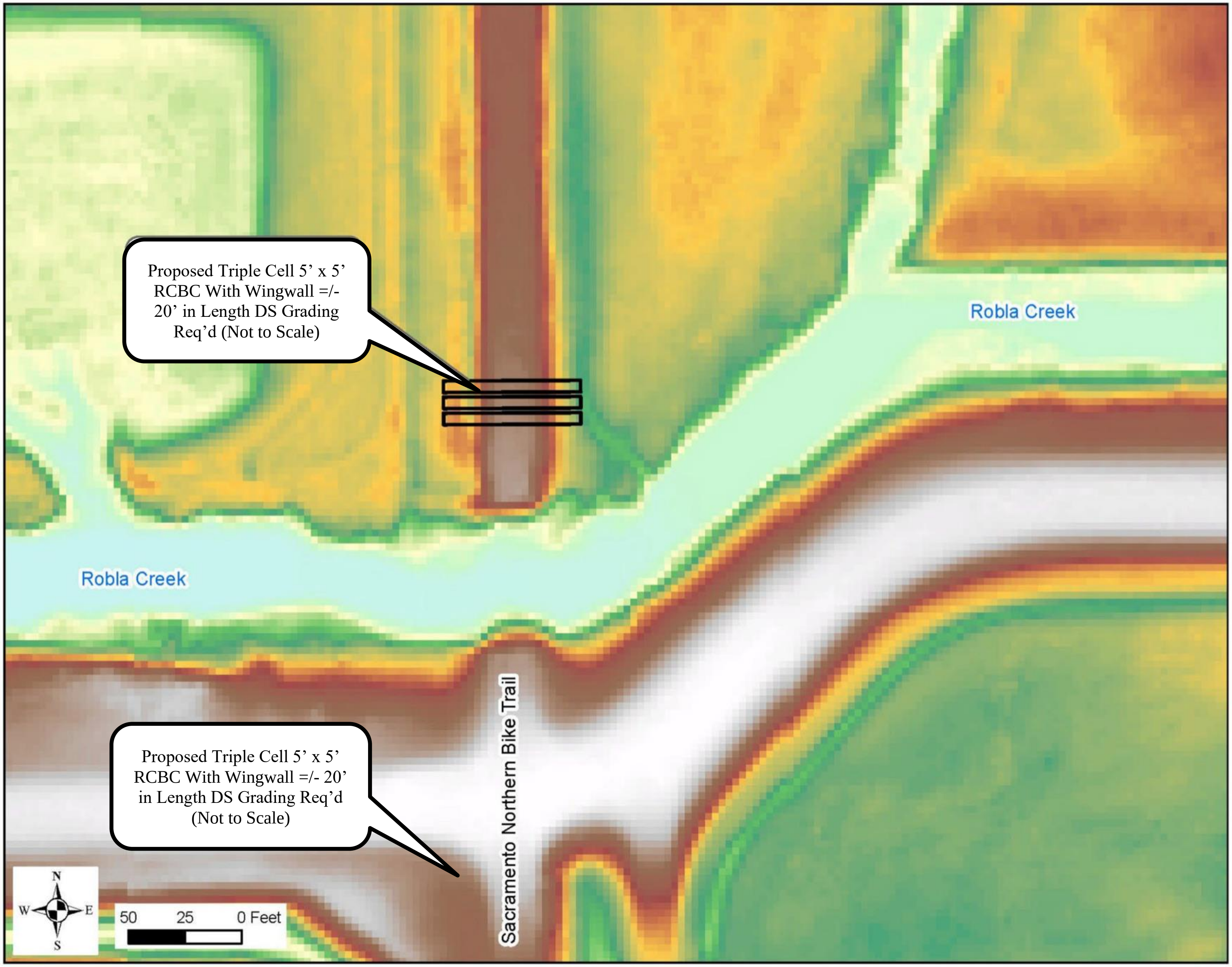

Figure 4. Terrain View of Culvert Design

APPENDIX E

INUNDATION MAPPING

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All Water surface elevations presented in Appendix E are in feet and vertical datum NAVD88 unless otherwise noted.

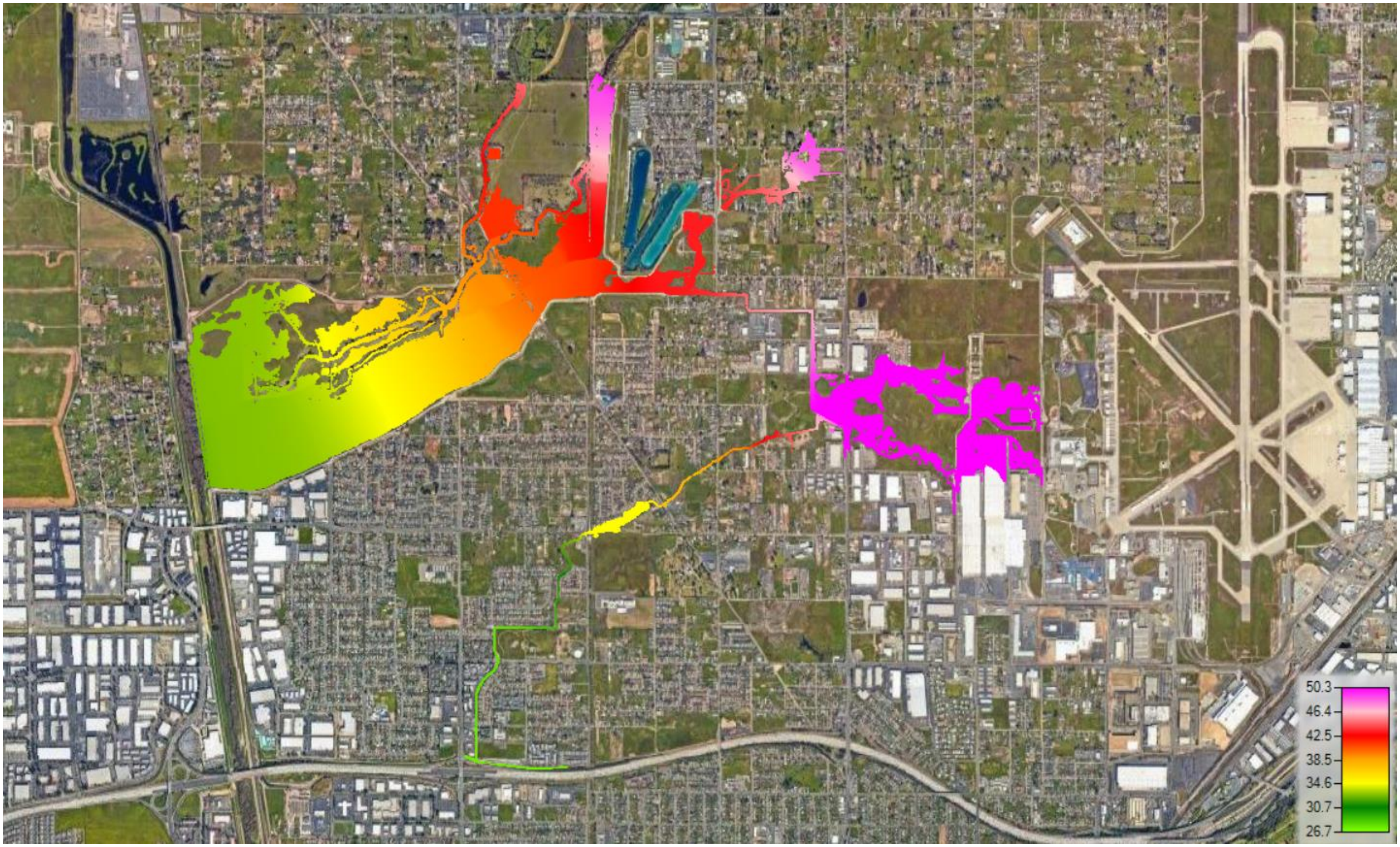

Figure 1: 50% (2 year) Annual Exceedance Probability (AEP) Pre-Project Water Surface Elevation (WSE) – Full Map

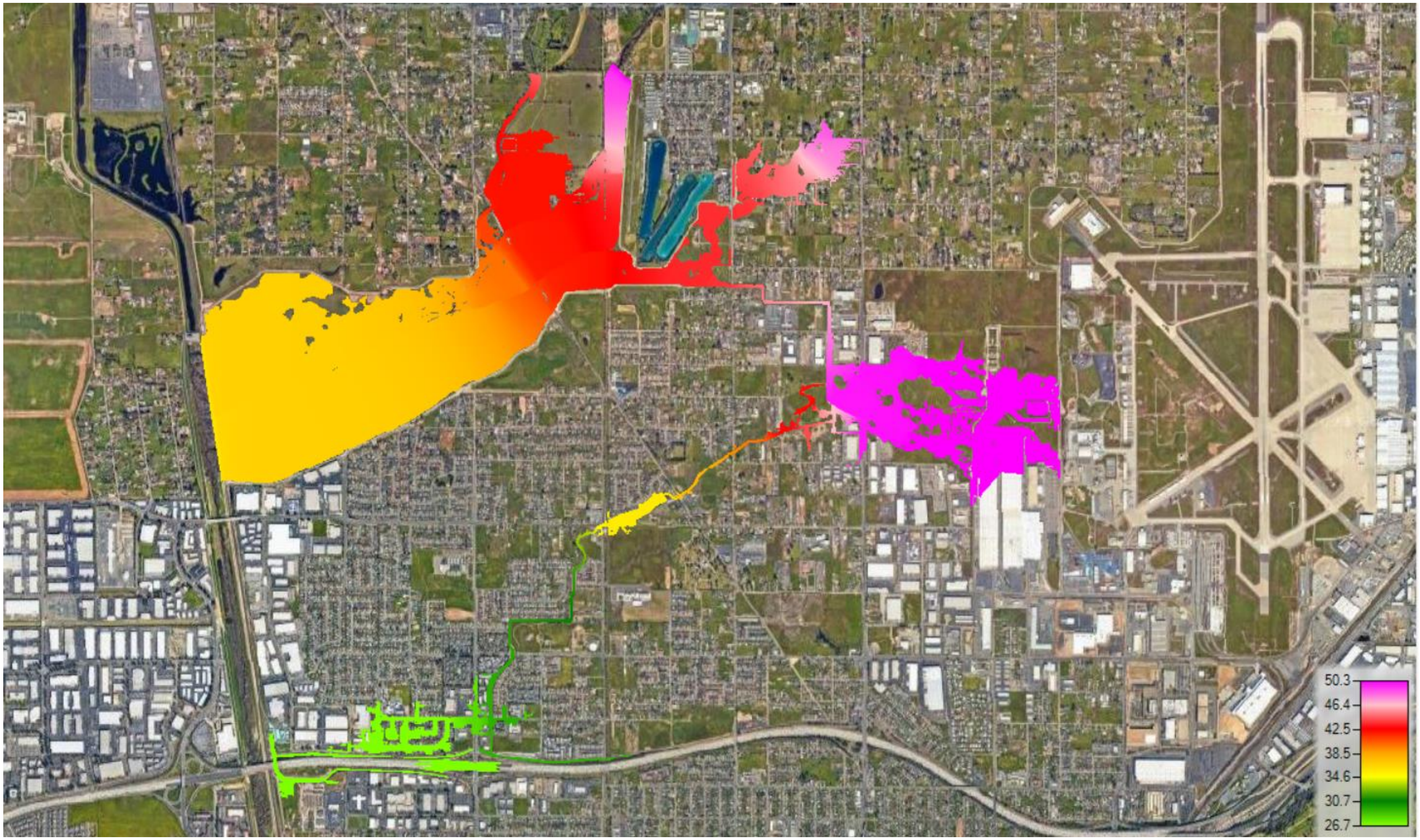

Figure 2: 10% (10 year) AEP Pre-Project WSE – Full Map

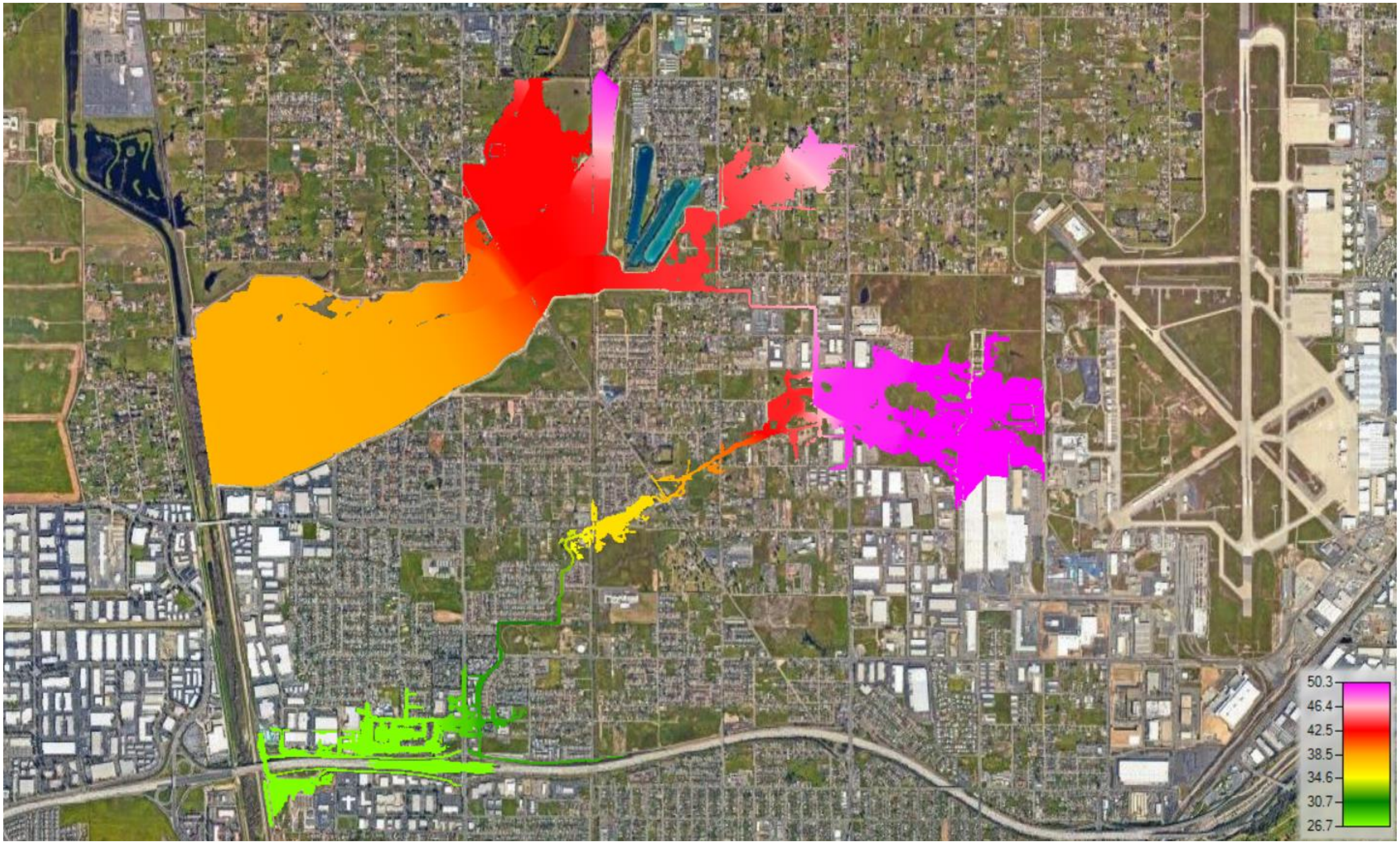

Figure 3: 4% (25 year) AEP Pre-Project WSE – Full Map

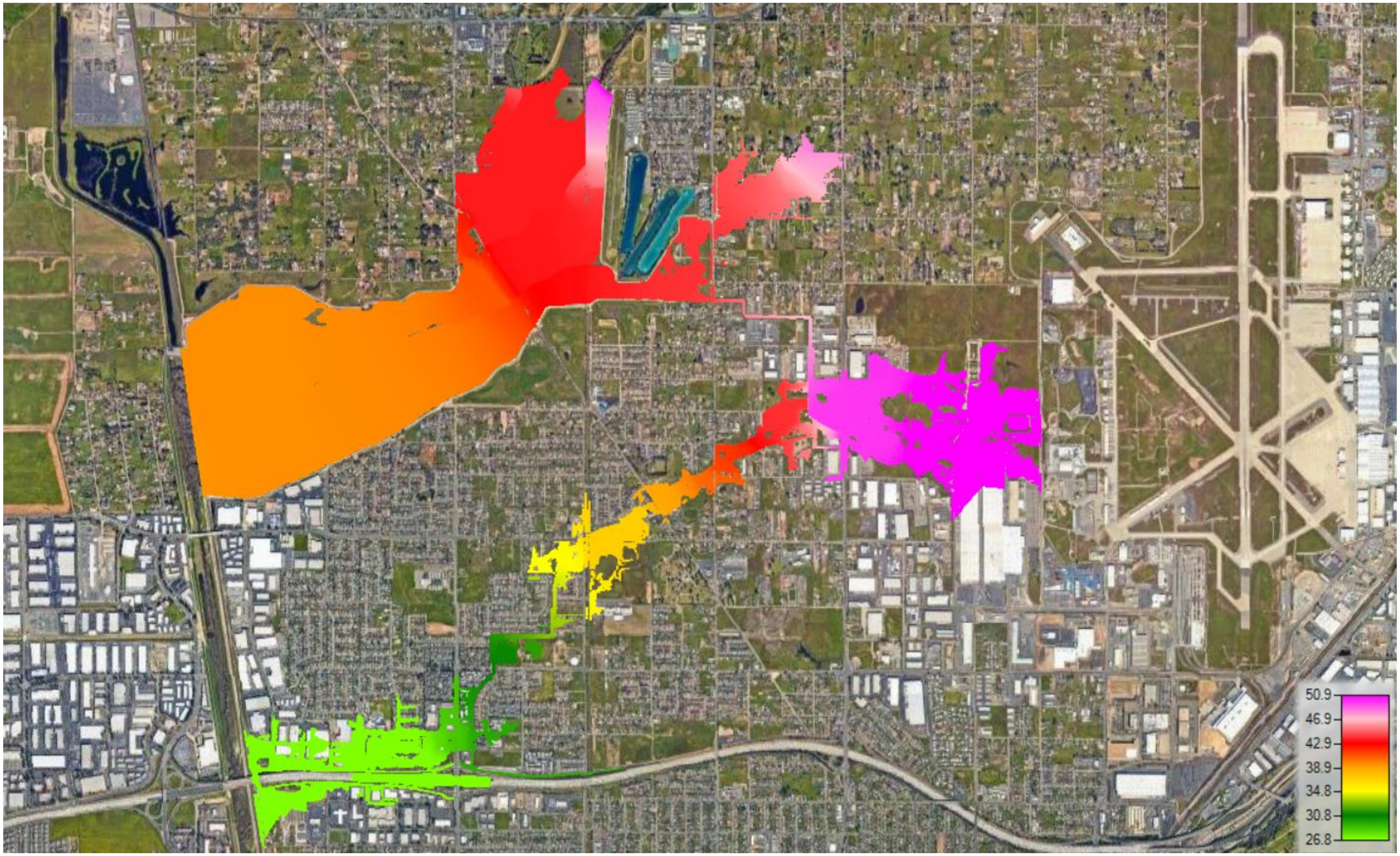

Figure 4: 2% (50 year) AEP Pre-Project WSE – Full Map

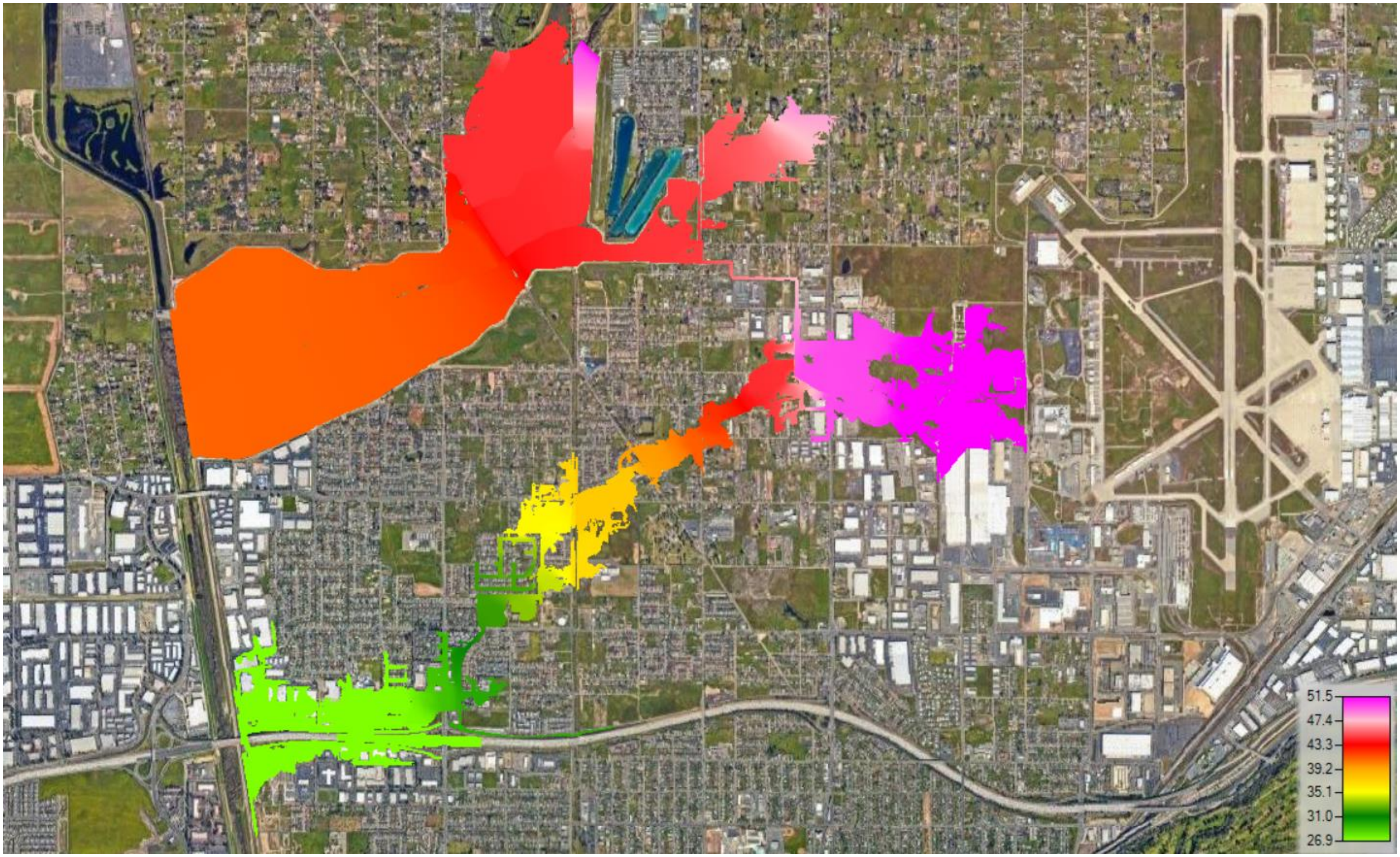

Figure 5: 1% (100 year) AEP Pre-Project WSE – Full Map

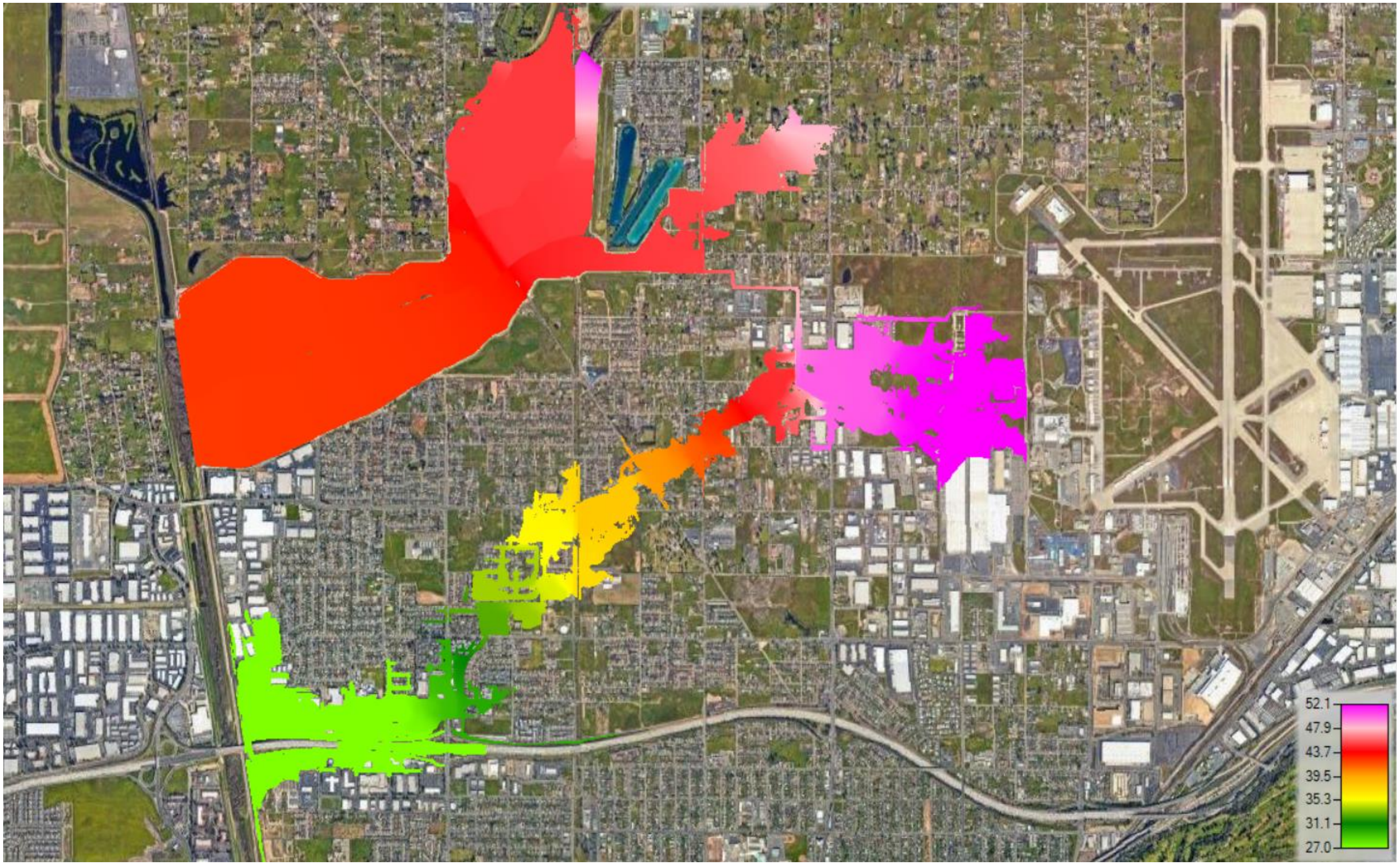

Figure 6: 0.5% (200 year) AEP Pre-Project WSE – Full Map

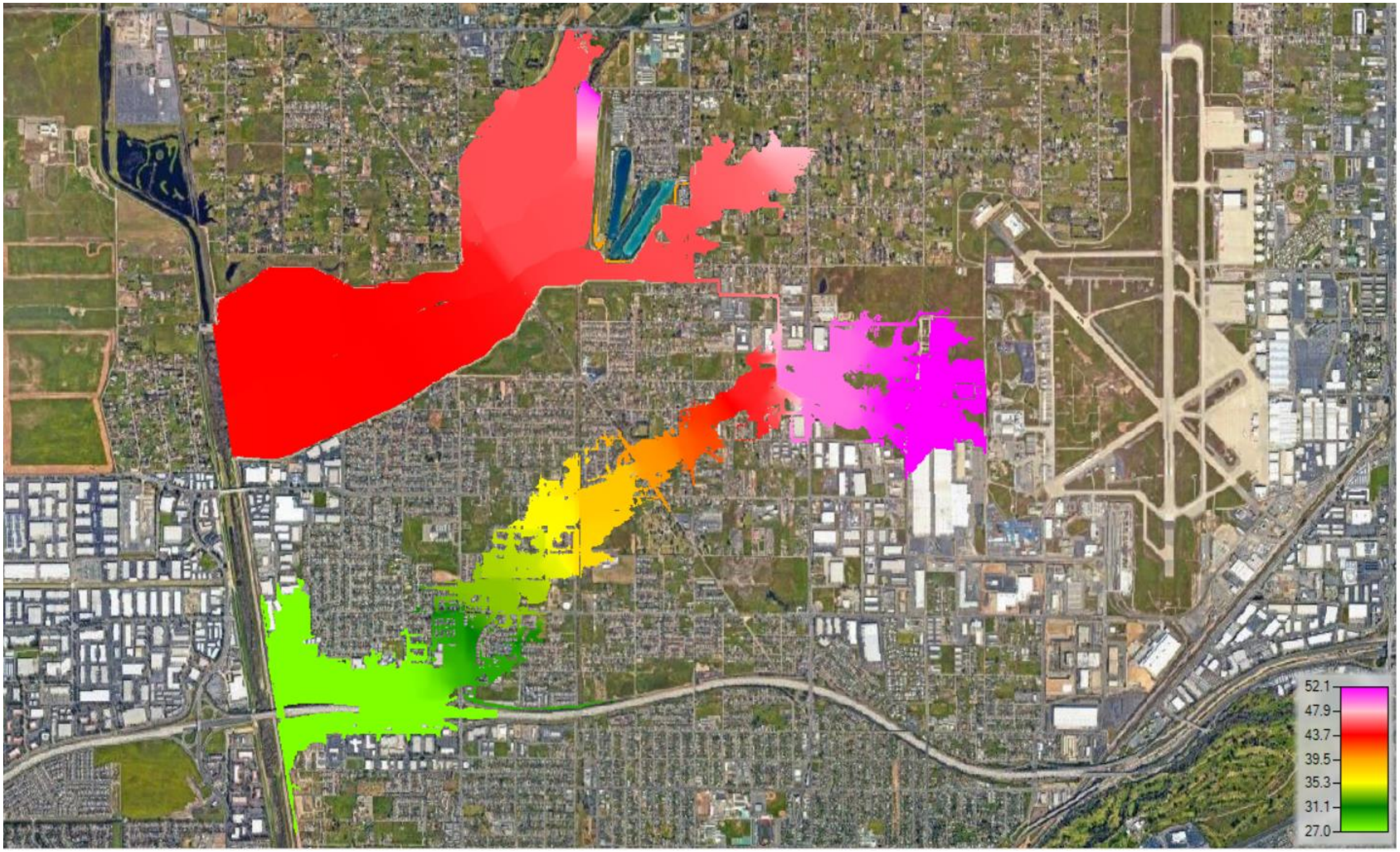

Figure 7: 0.2% (500 year) AEP Pre-Project WSE – Full Map

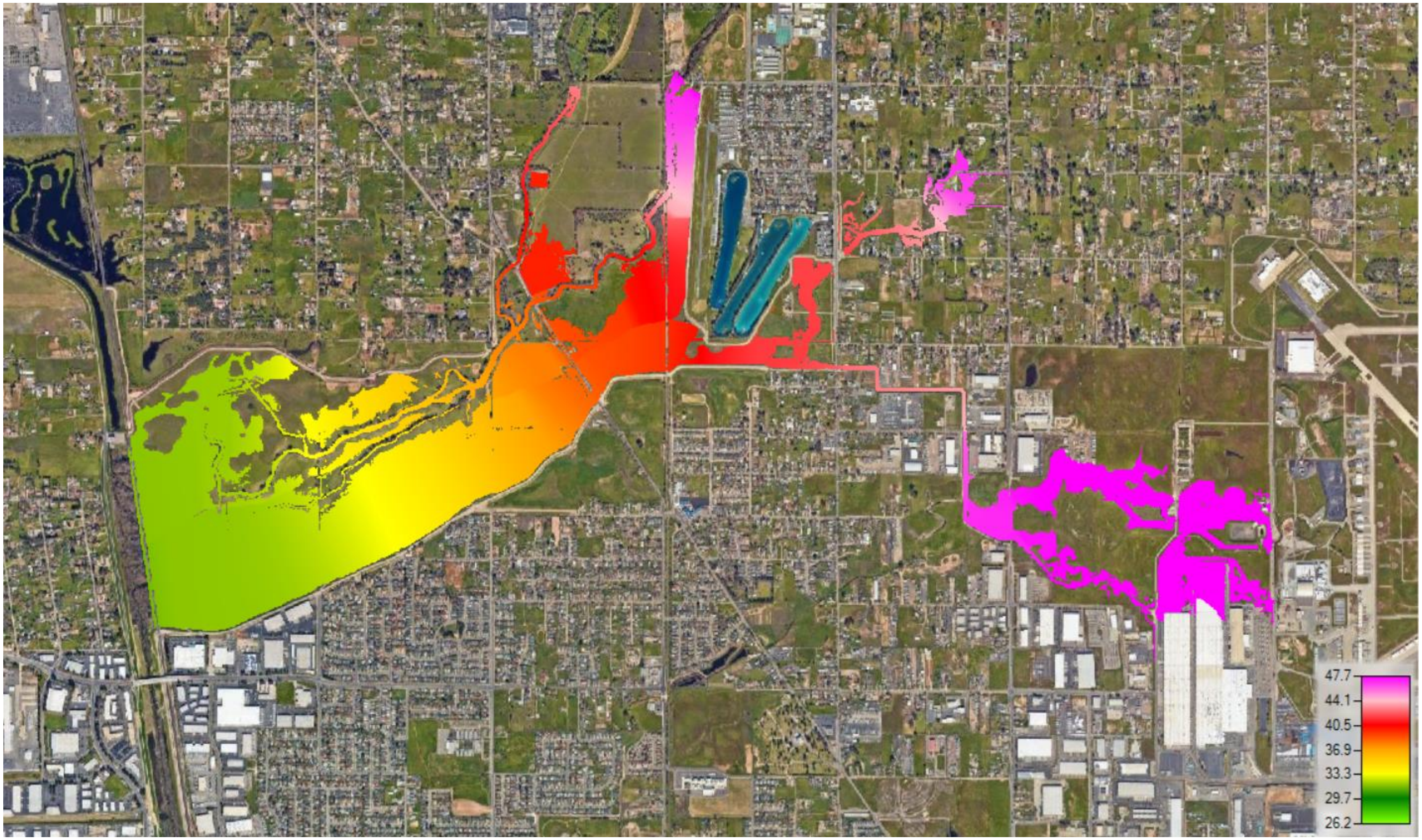

Figure 8: 50% (2 year) AEP Post-Project WSE – Full Map

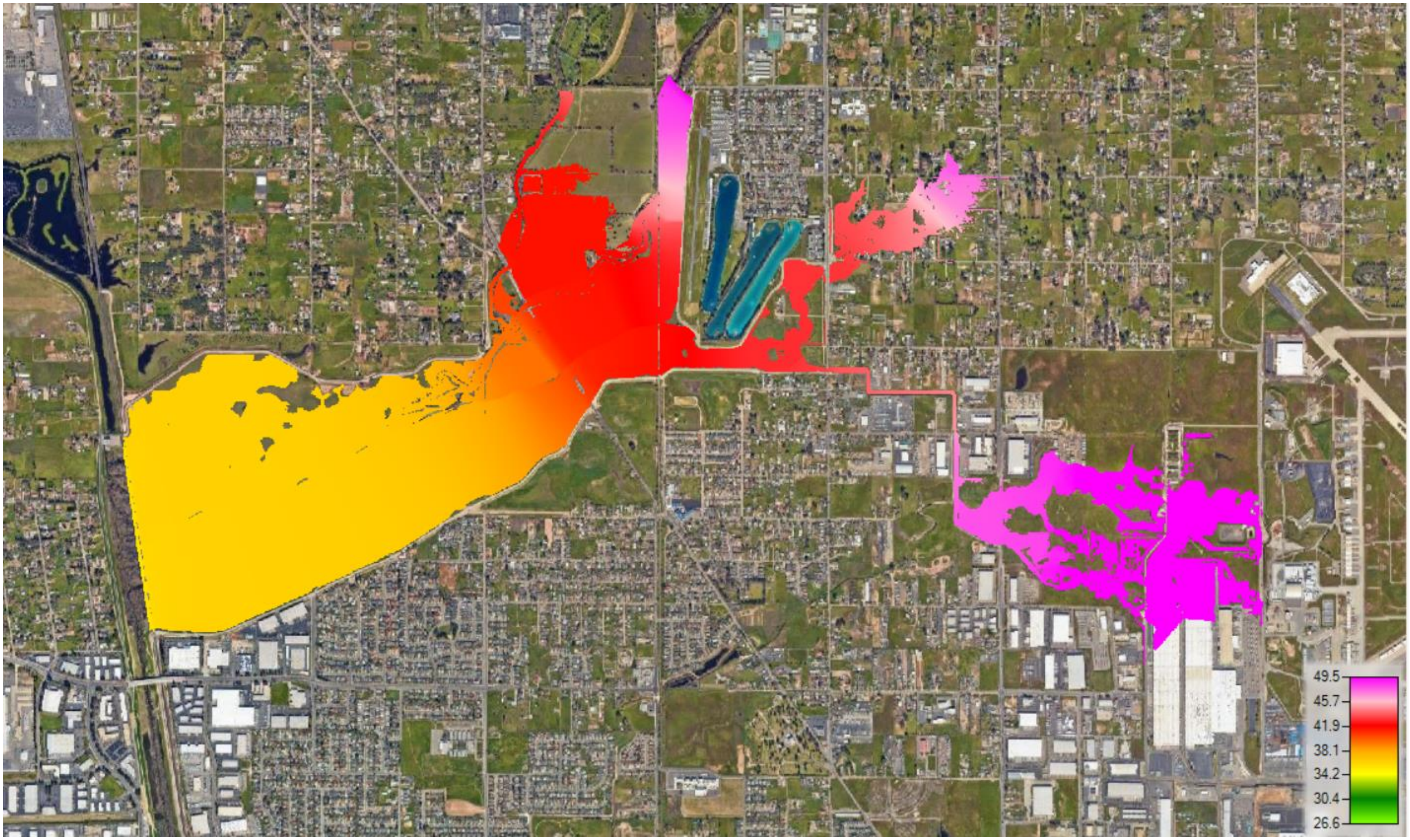

Figure 9: 10% (10 year) AEP Post-Project WSE – Full Map

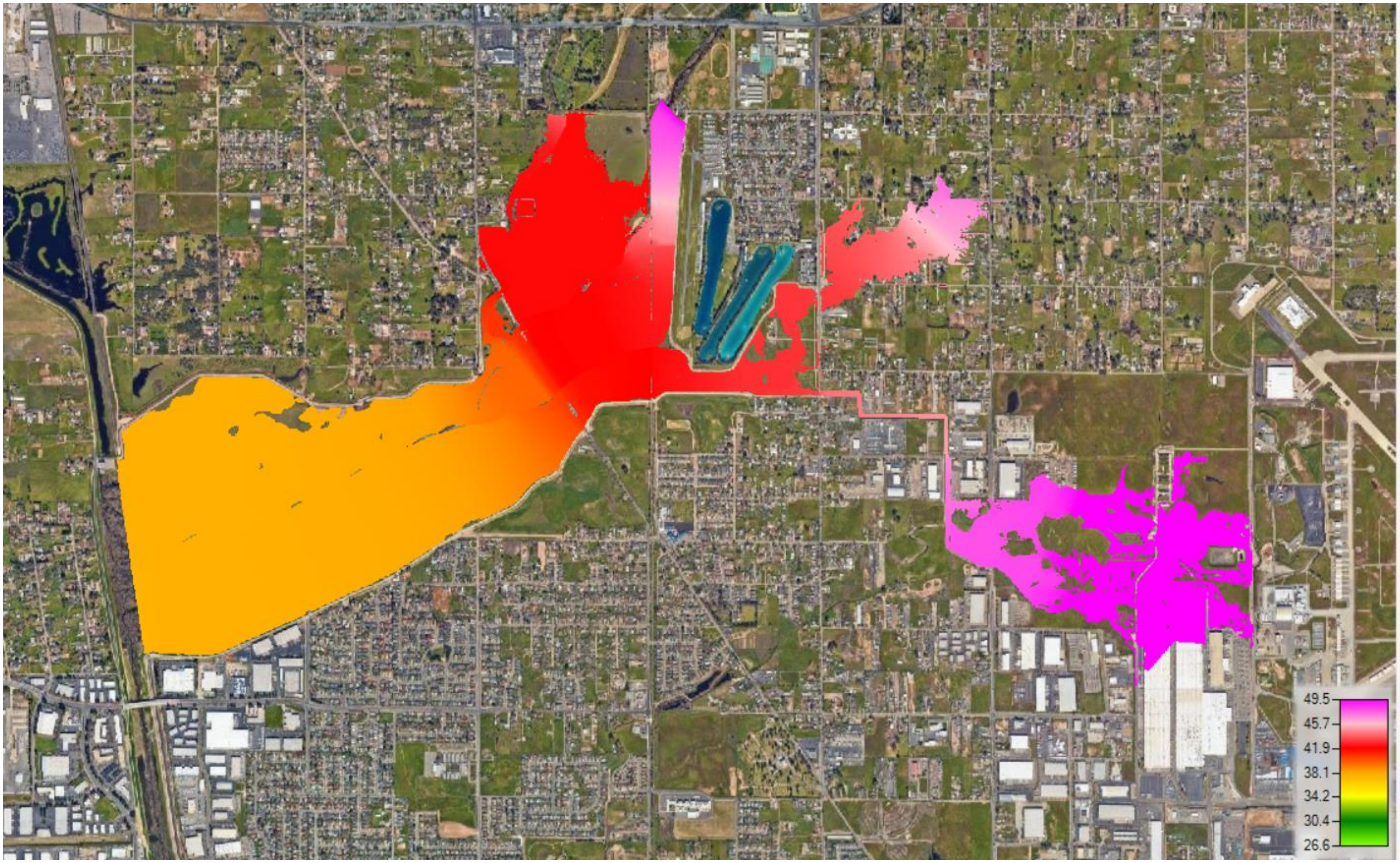

Figure 10: 4% (25 year) AEP Post-Project WSE – Full Map

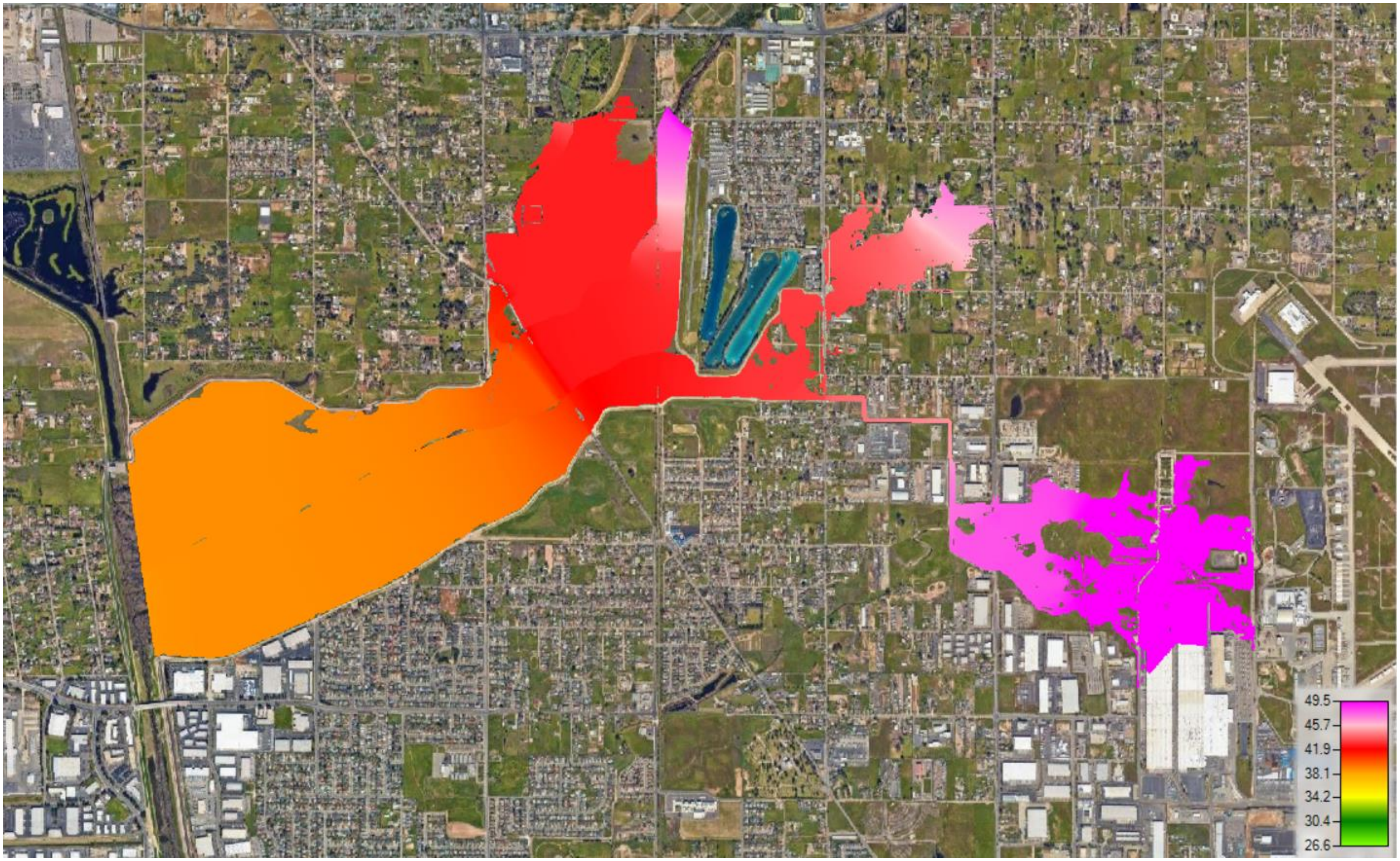

Figure 11: 2% (50 year) AEP Post-Project WSE – Full Map

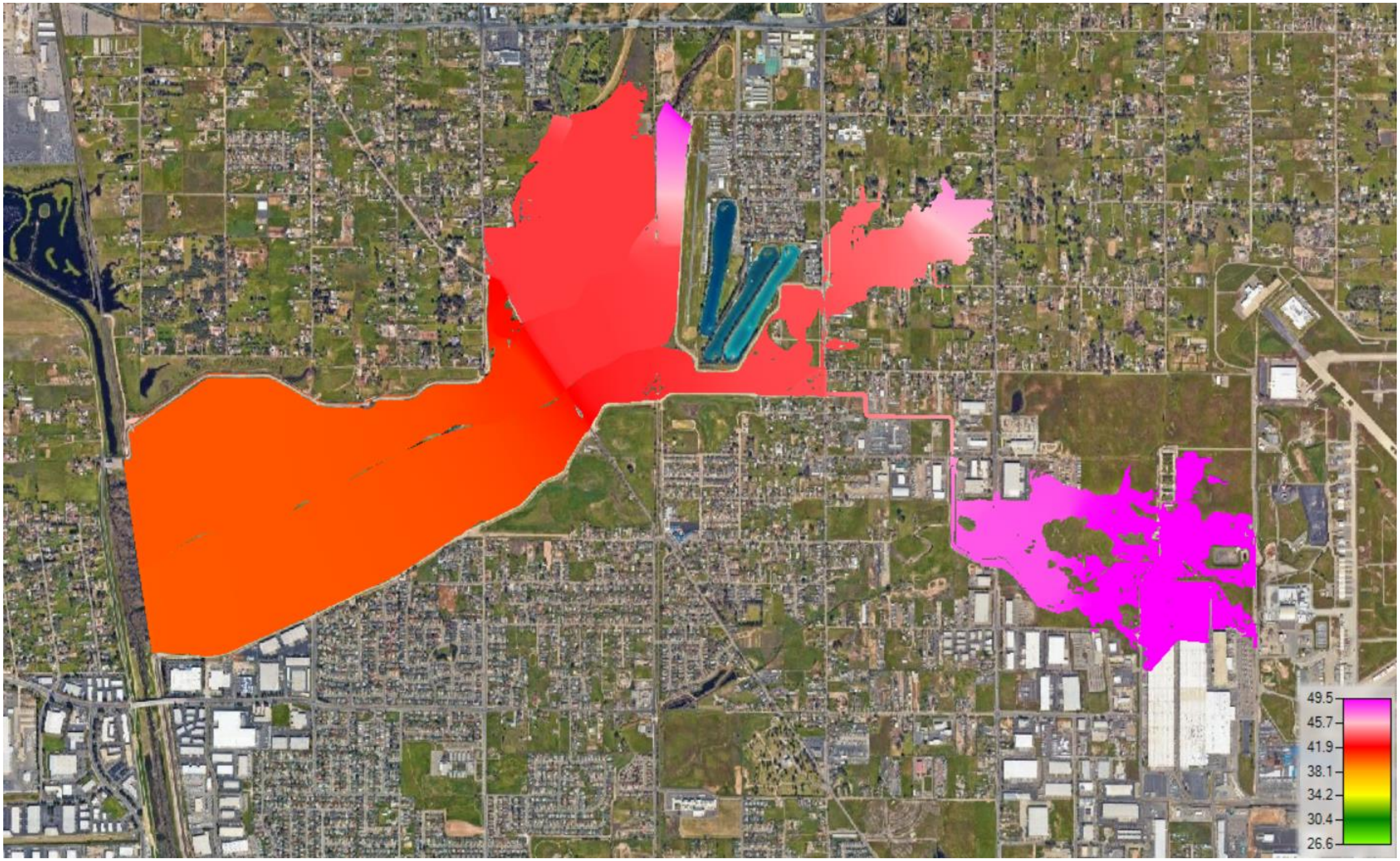

Figure 12: 1% (100 year) AEP Post-Project WSE – Full Map

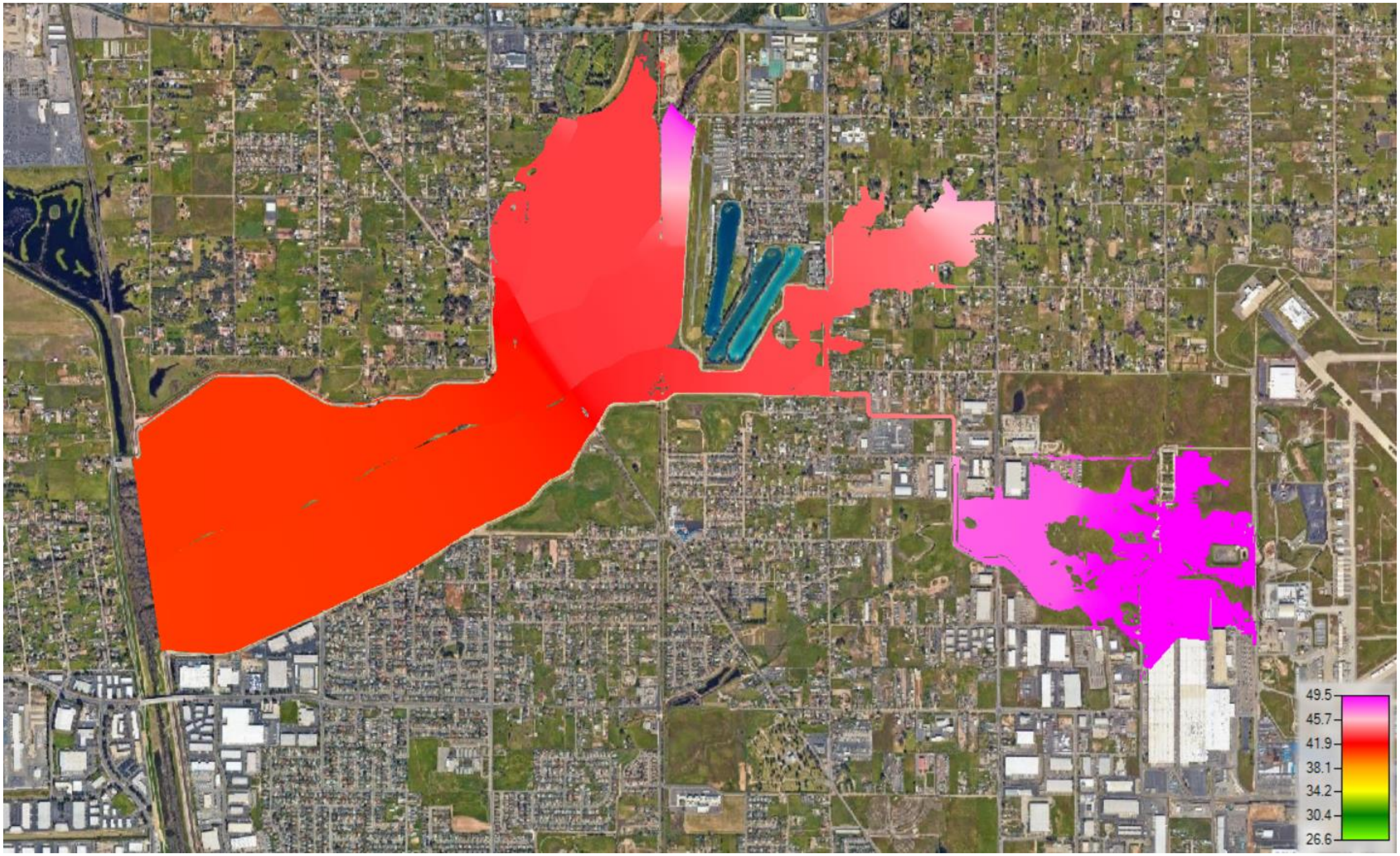

Figure 13: 0.5% (200 year) AEP Post-Project WSE – Full Map

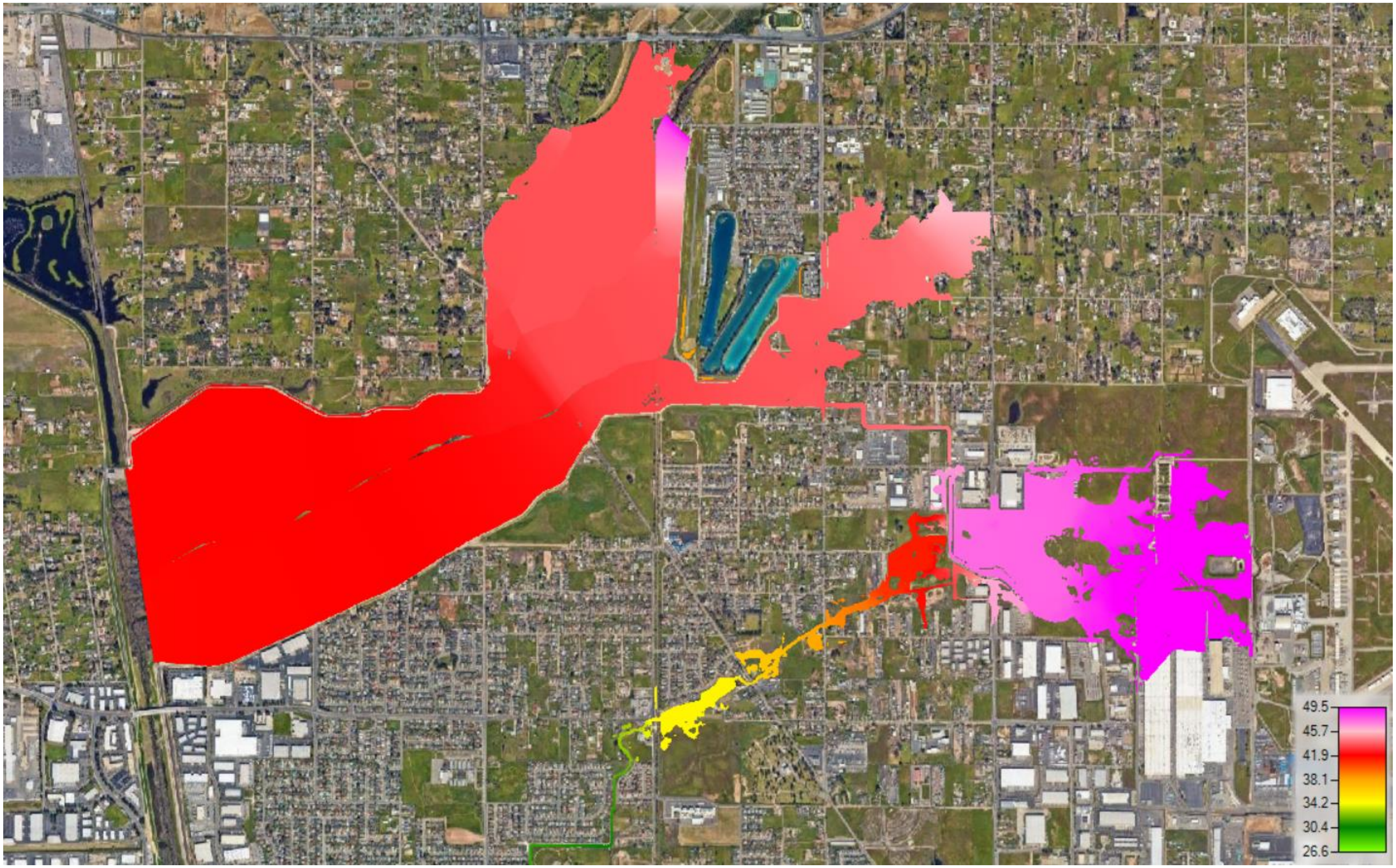

Figure 14: 0.2% (500 year) AEP Post-Project WSE – Full Map

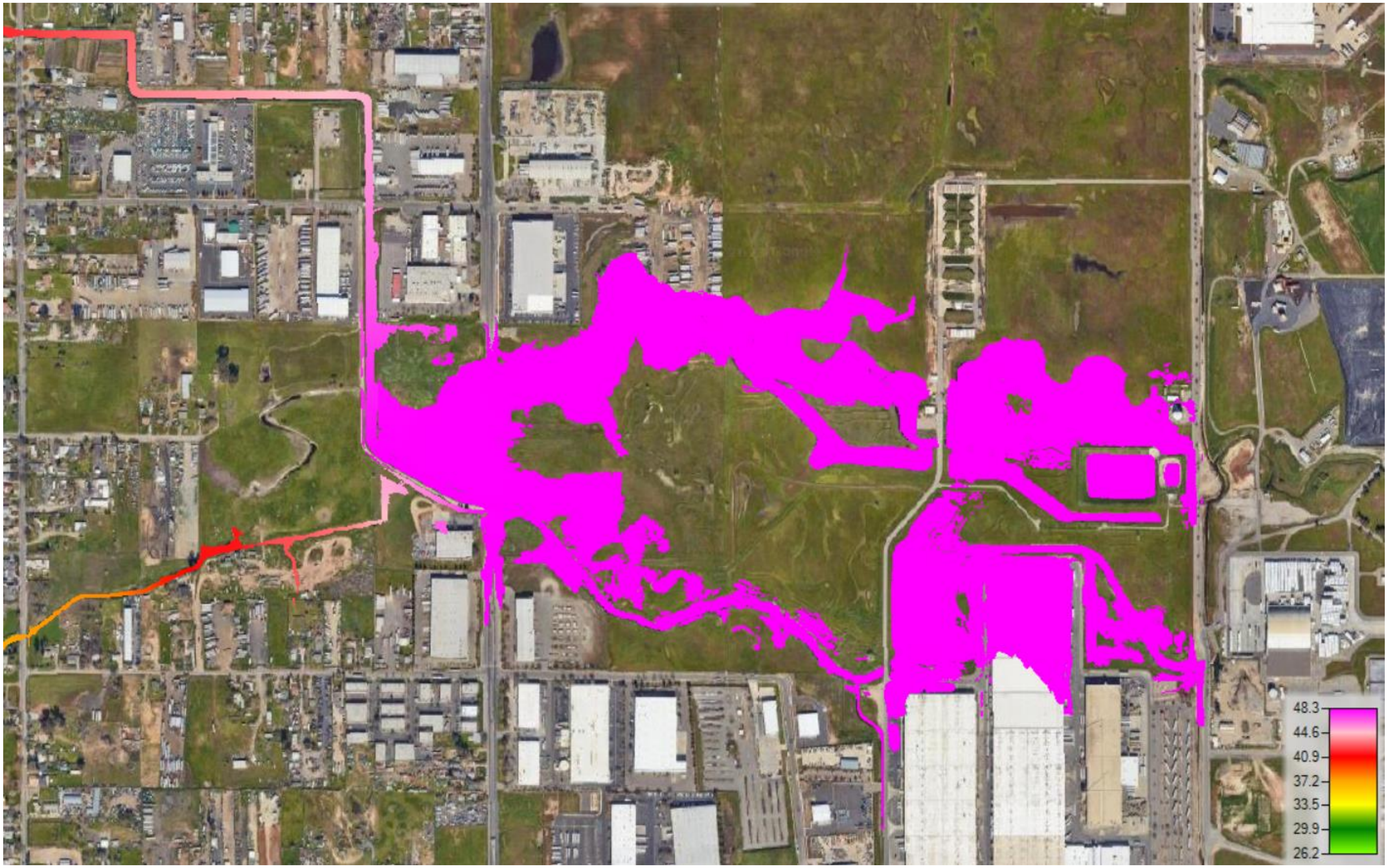

Figure 15: 50% (2 year) AEP Pre-Project WSE – Intersection of Vinci & Raley

Figure 16: 10% (10 year) AEP Pre-Project WSE – Intersection of Vinci & Raley

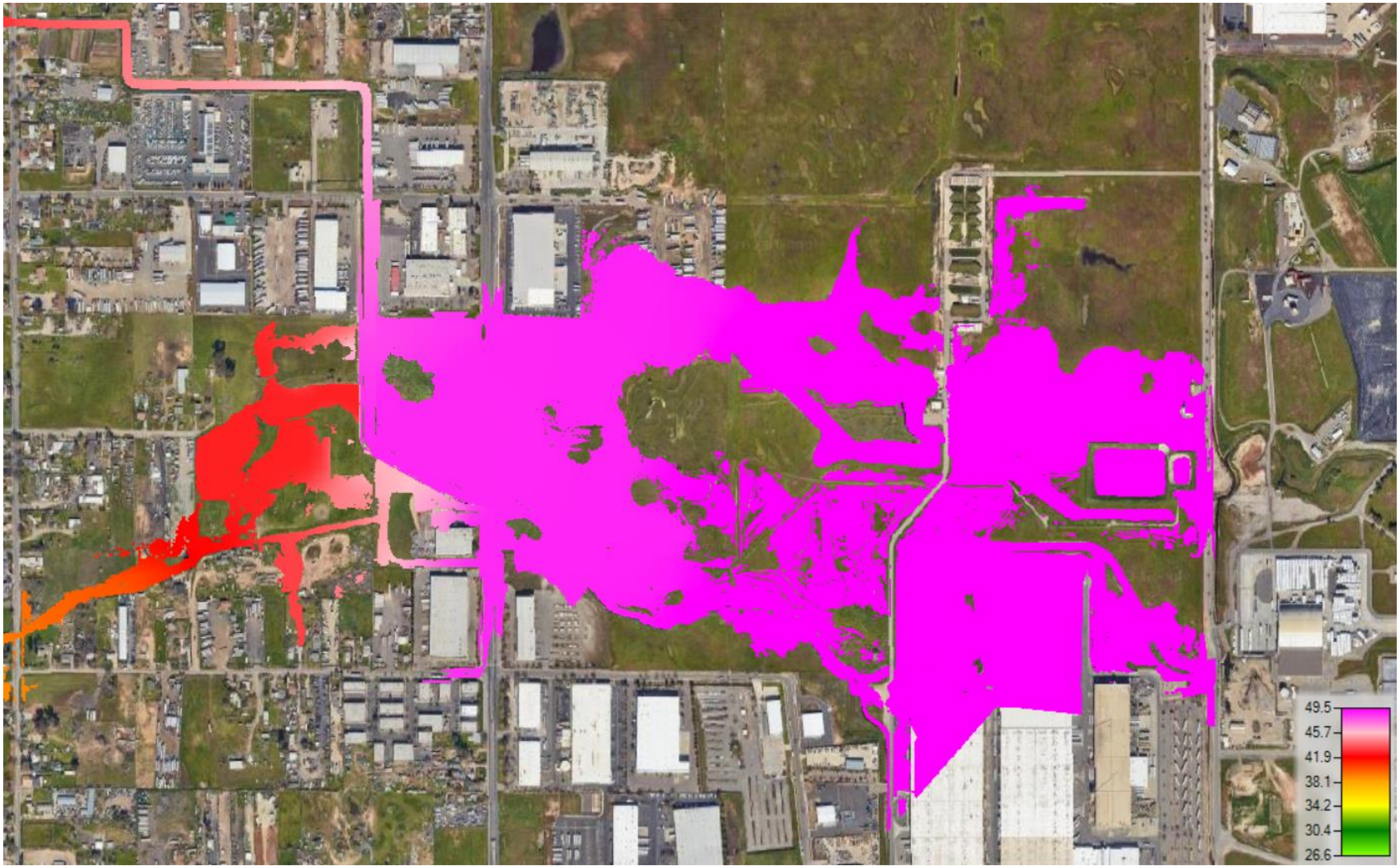

Figure 17: 4% (25 year) AEP Pre-Project WSE – Intersection of Vinci & Raley

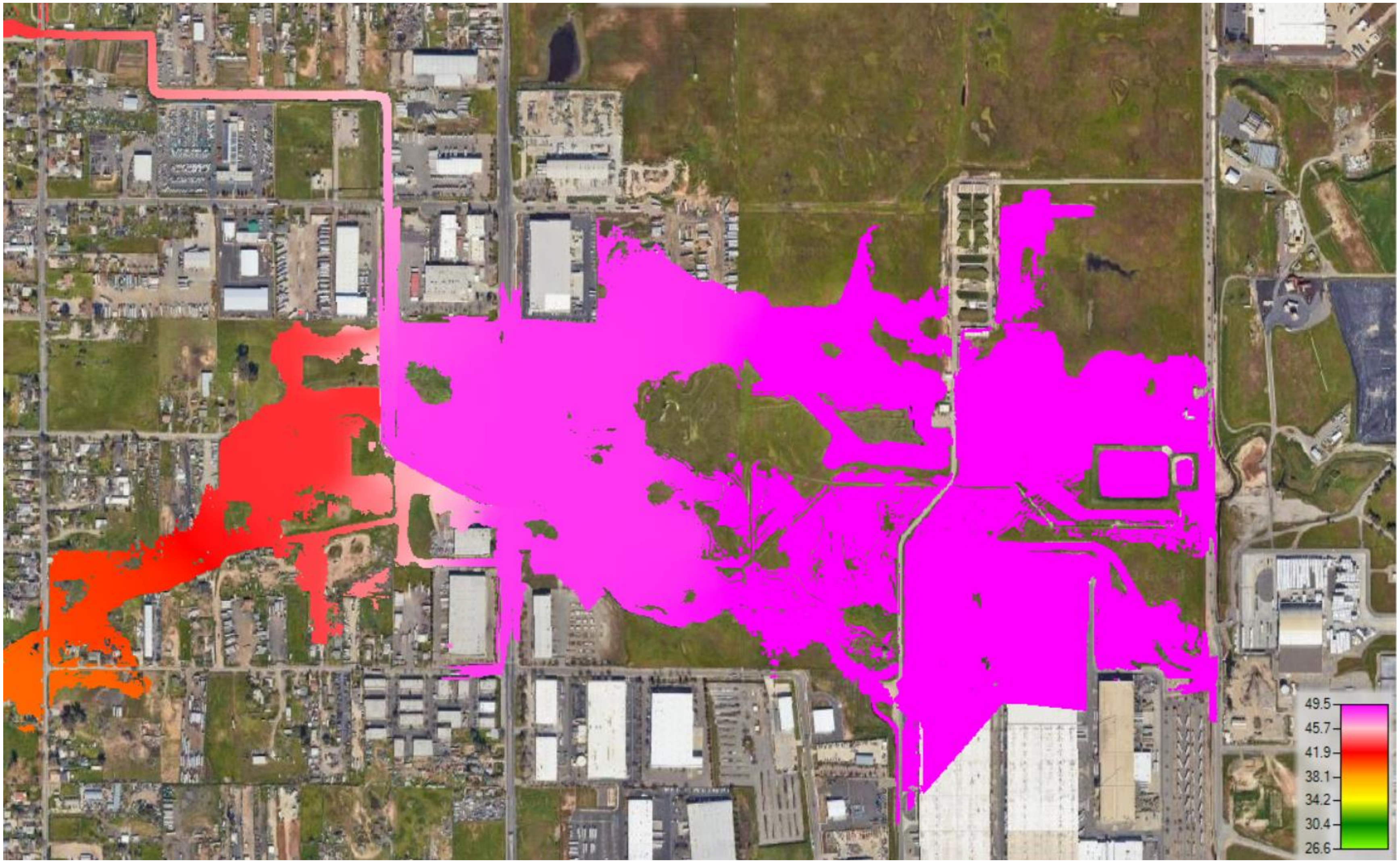

Figure 18: 2% (50 year) AEP Pre-Project WSE – Intersection of Vinci & Raley

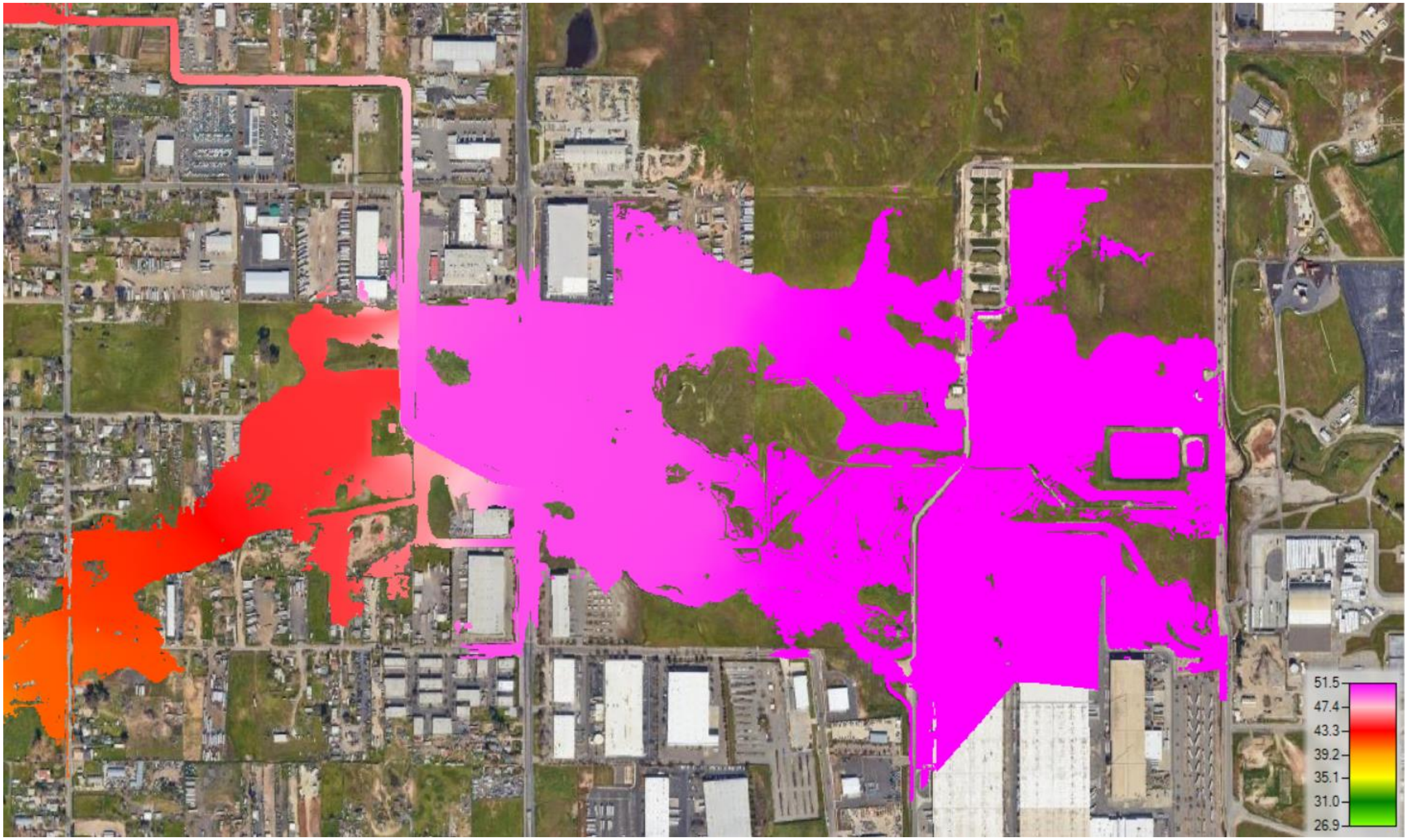

Figure 19: 1% (100 year) AEP Pre-Project WSE – Intersection of Vinci & Raley

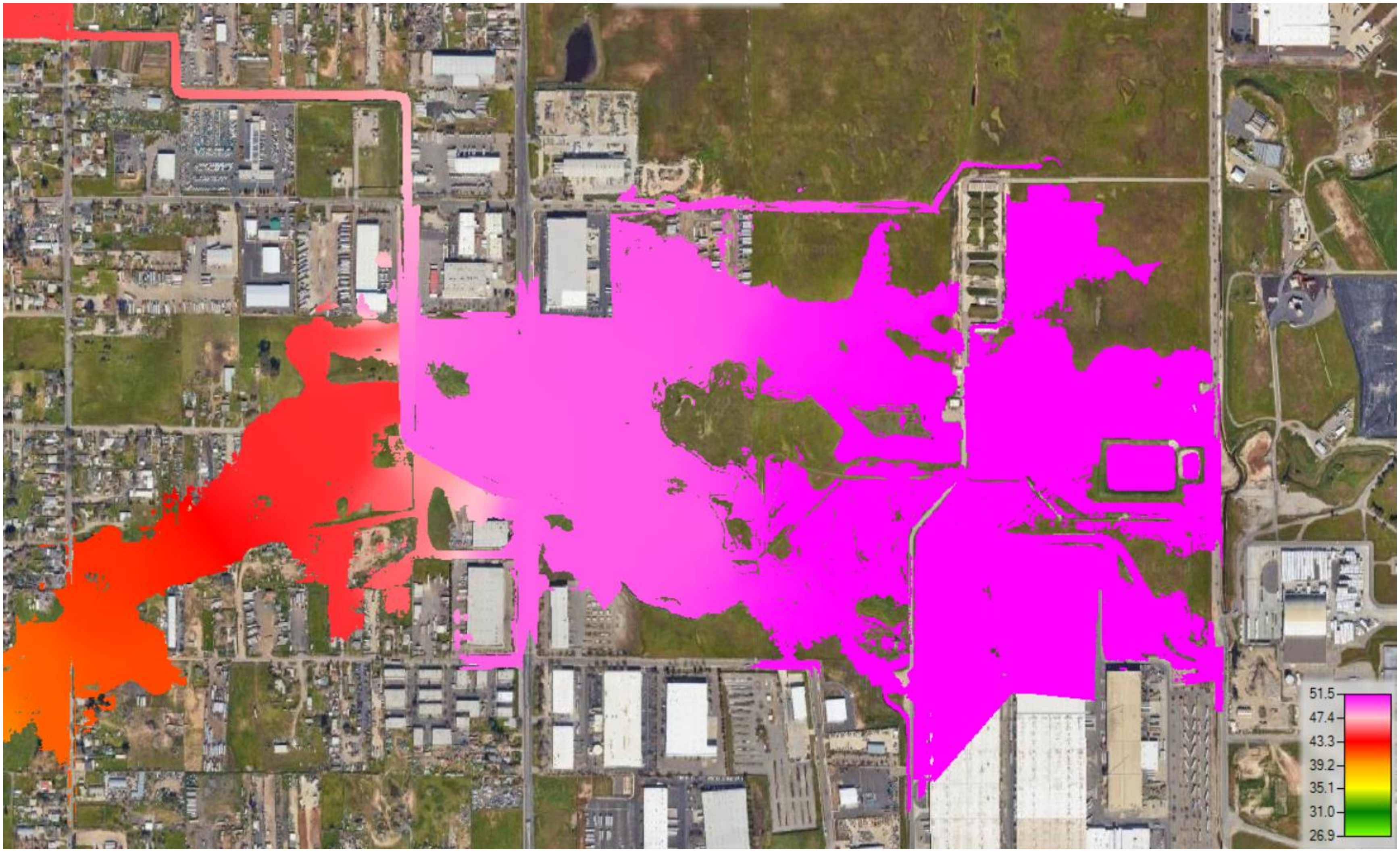

Figure 20: 0.5% (200 year) AEP Pre-Project WSE – Intersection of Vinci & Raley

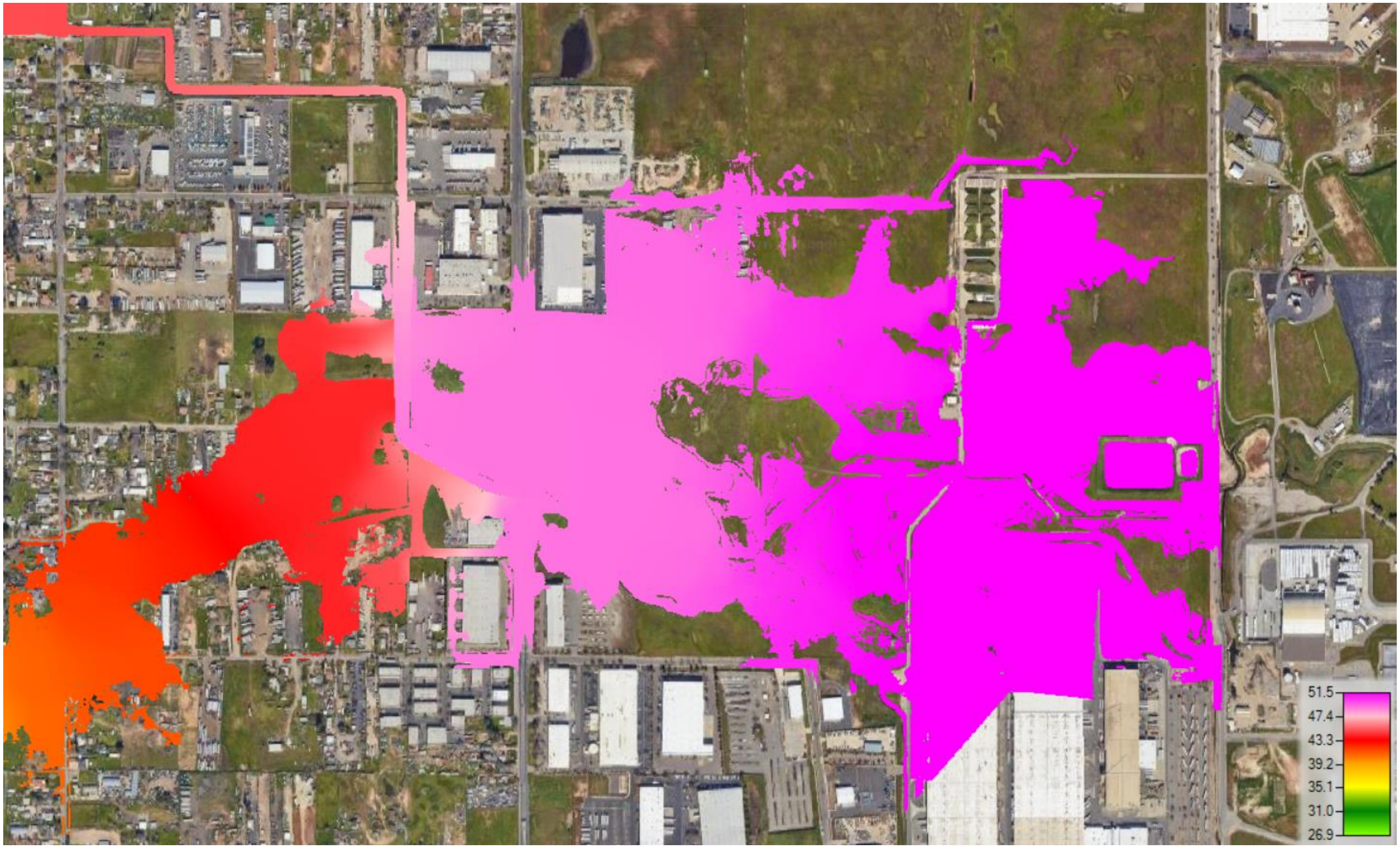

Figure 21: 0.2% (500 year) AEP Pre-Project WSE – Intersection of Vinci & Raley

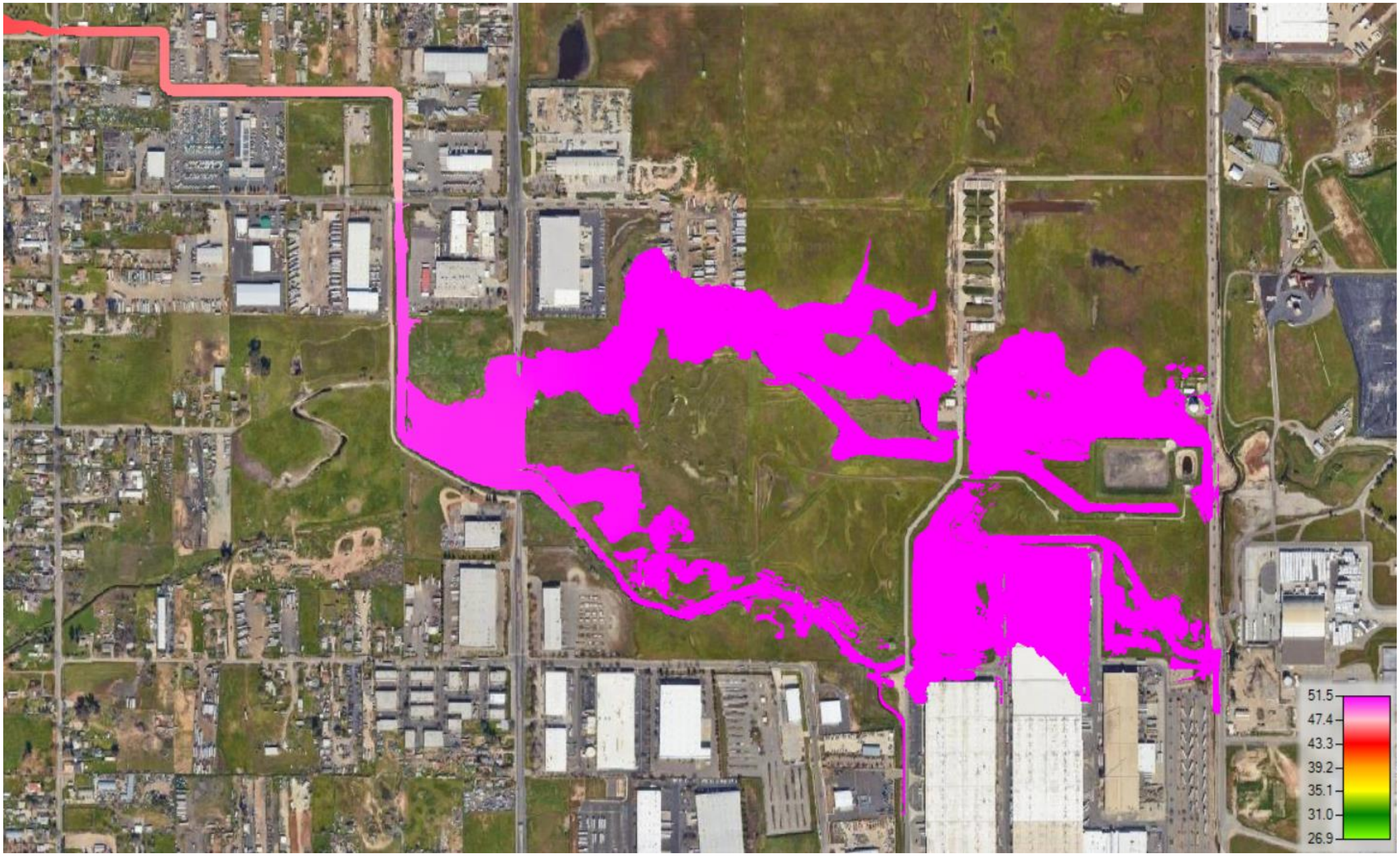

Figure 22: 50% (2 year) AEP Post-Project WSE – Intersection of Vinci & Raley

Figure 23: 10% (10 year) AEP Post-Project WSE – Intersection of Vinci & Raley

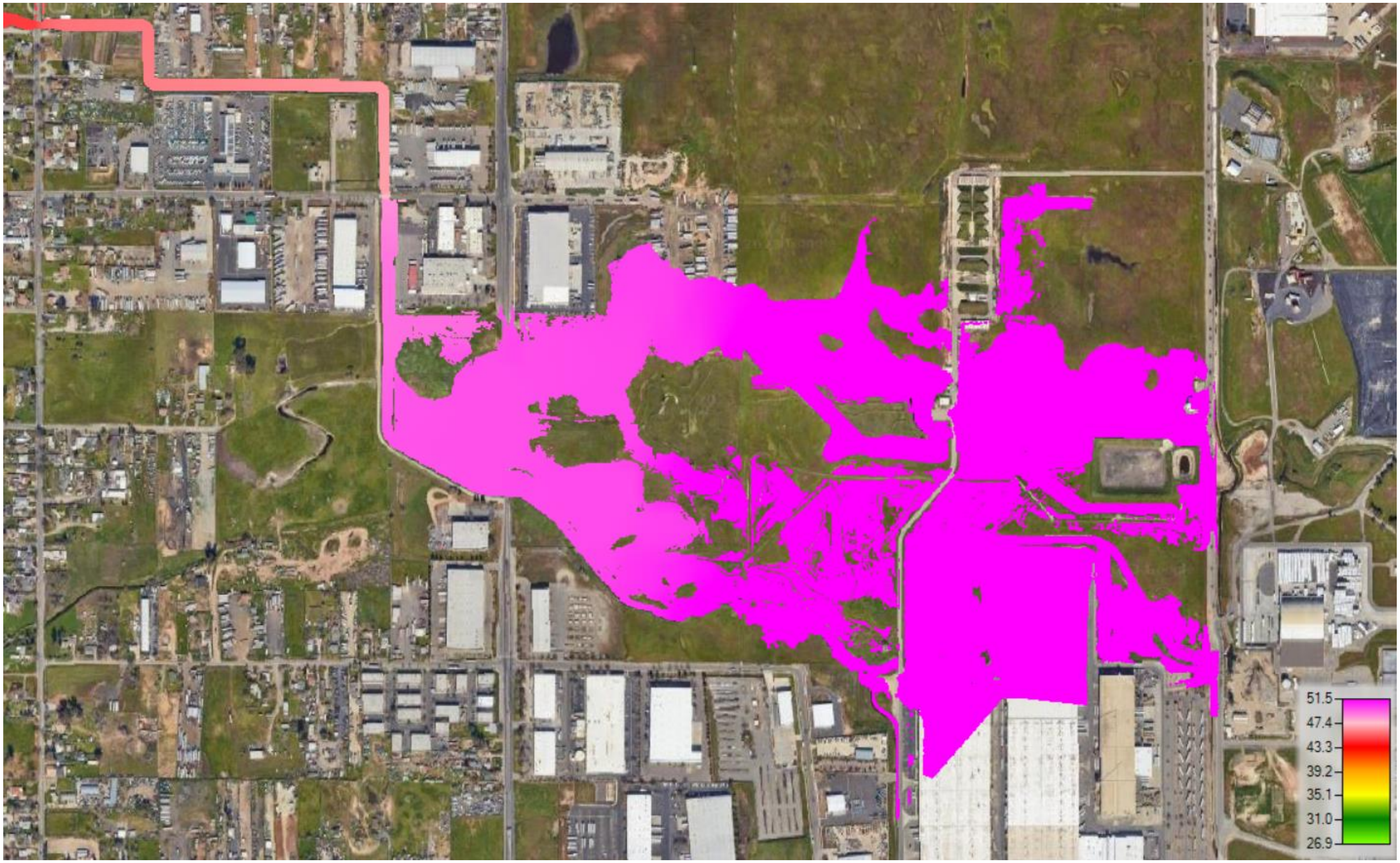

Figure 24: 4% (25 year) AEP Post-Project WSE – Intersection of Vinci & Raley

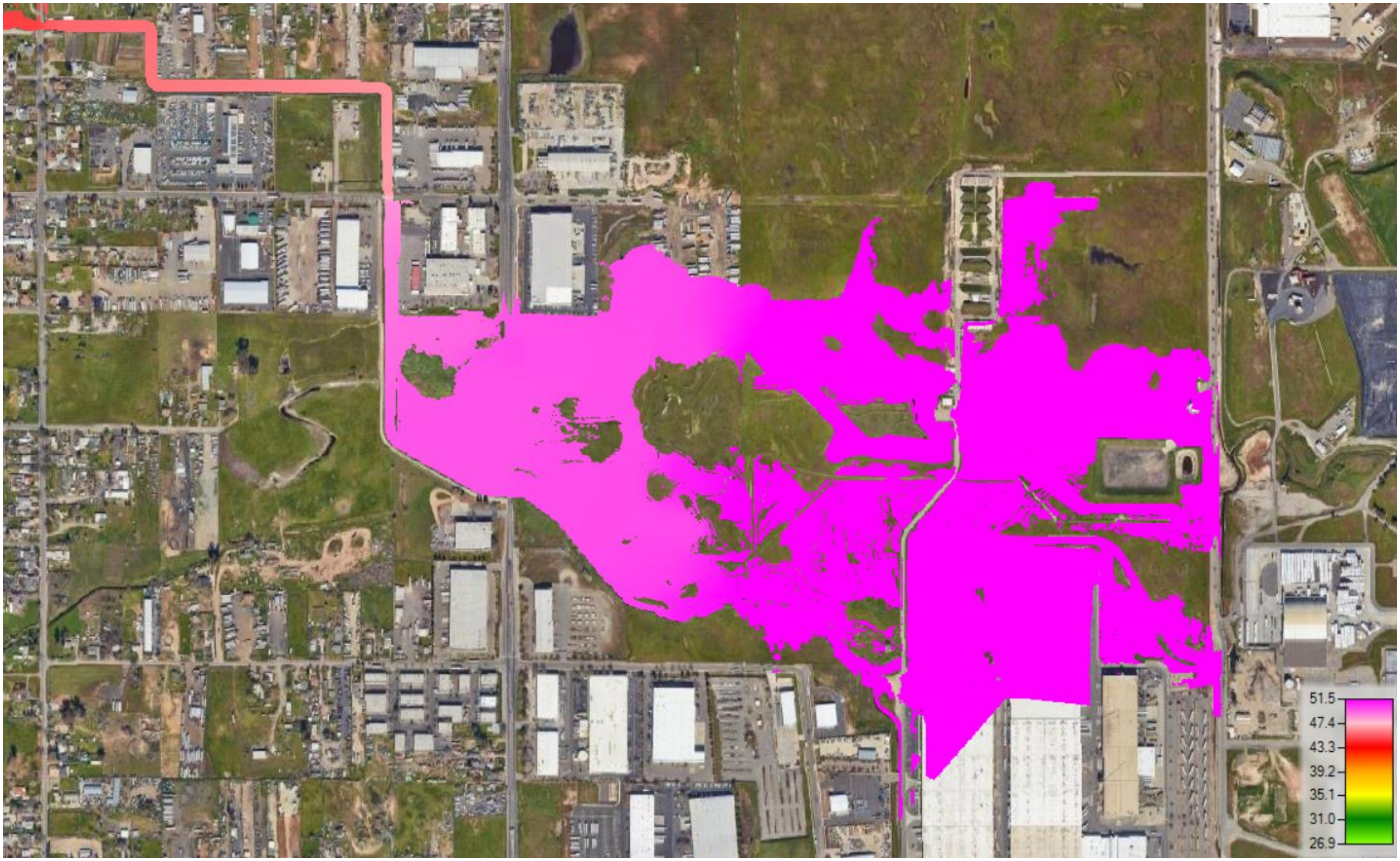

Figure 25: 2% (50 year) AEP Post-Project WSE – Intersection of Vinci & Raley

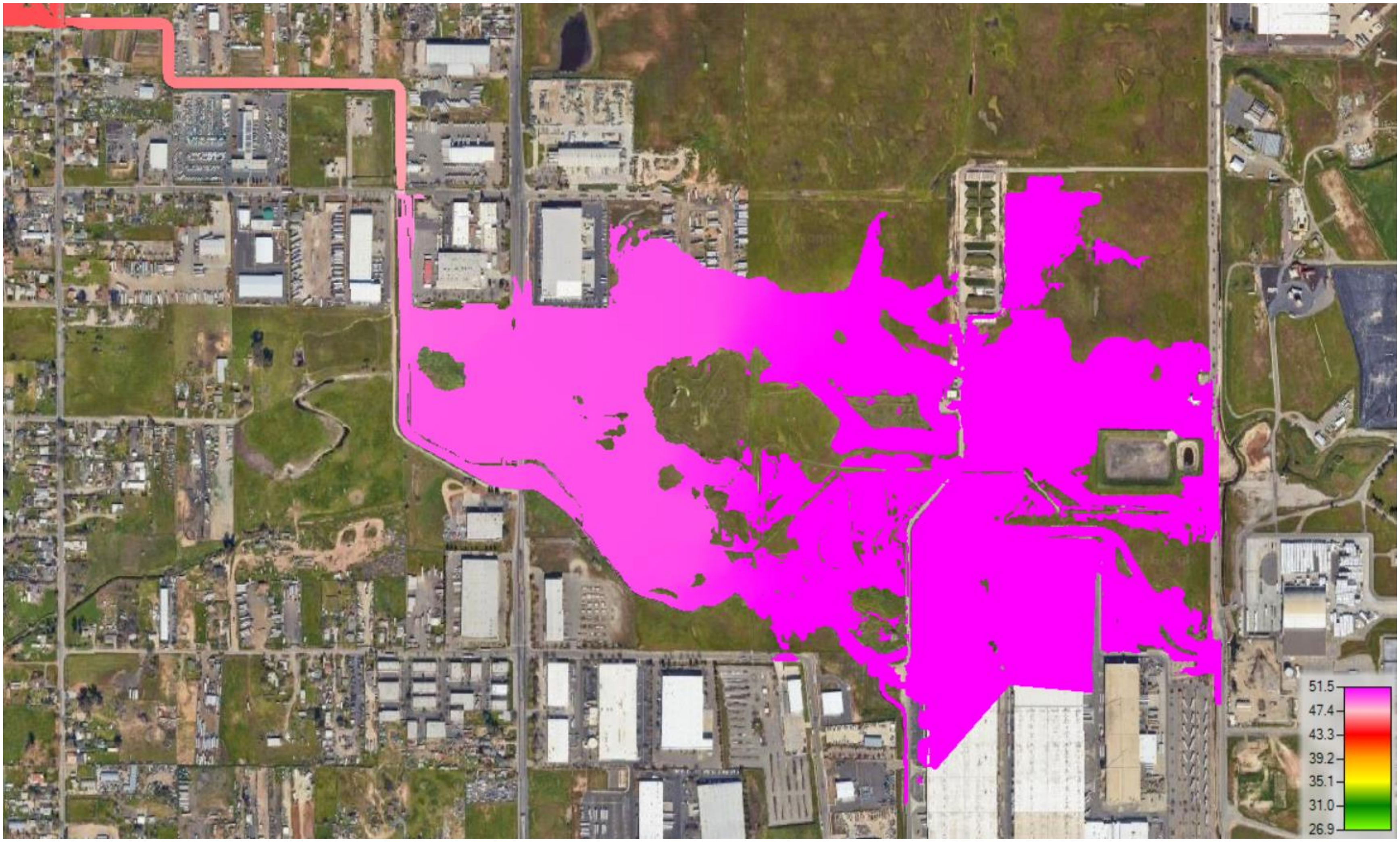

Figure 26: 1% (100 year) AEP Post-Project WSE – Intersection of Vinci & Raley

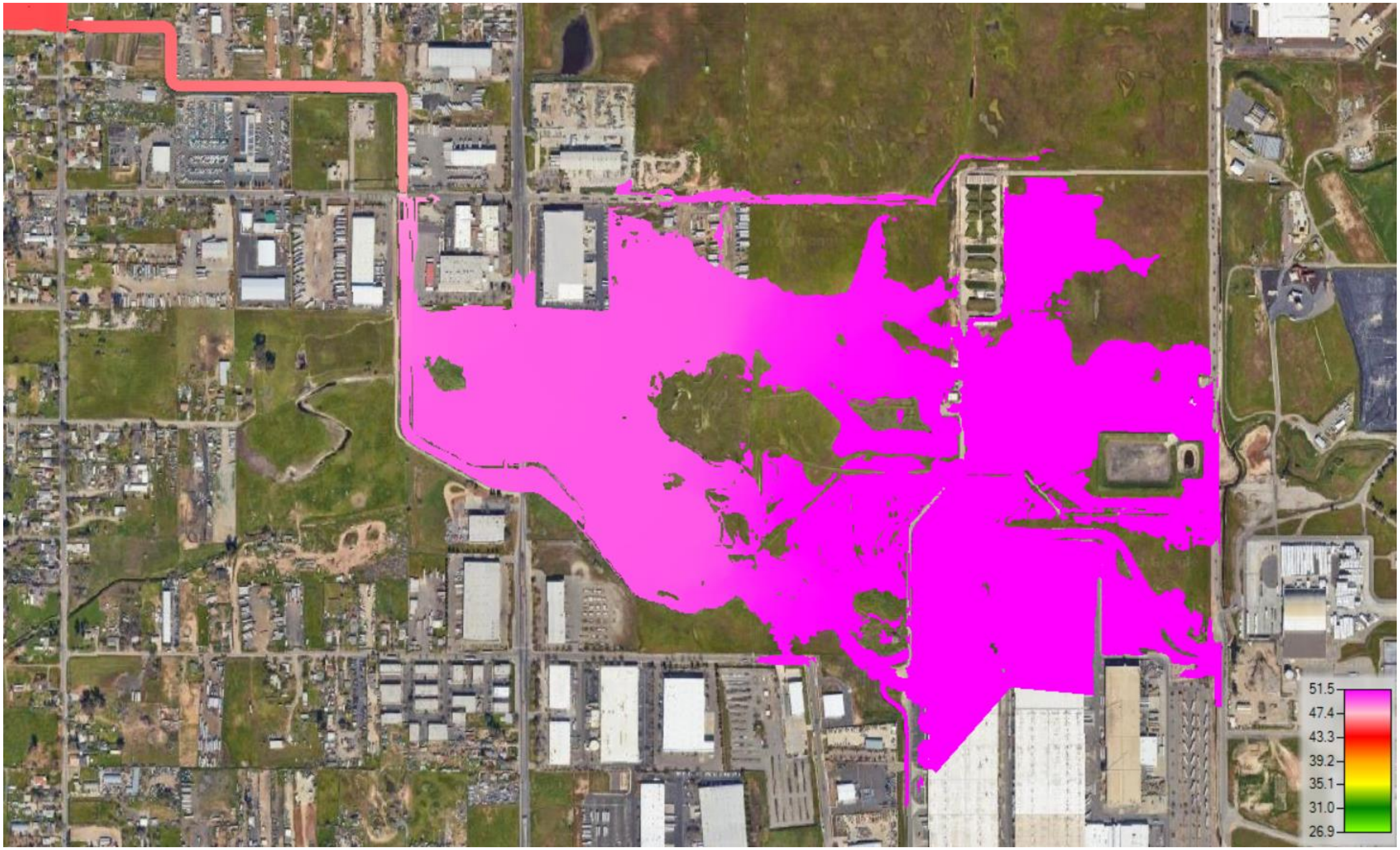

Figure 27: 0.5% (200 year) AEP Post-Project WSE – Intersection of Vinci & Raley

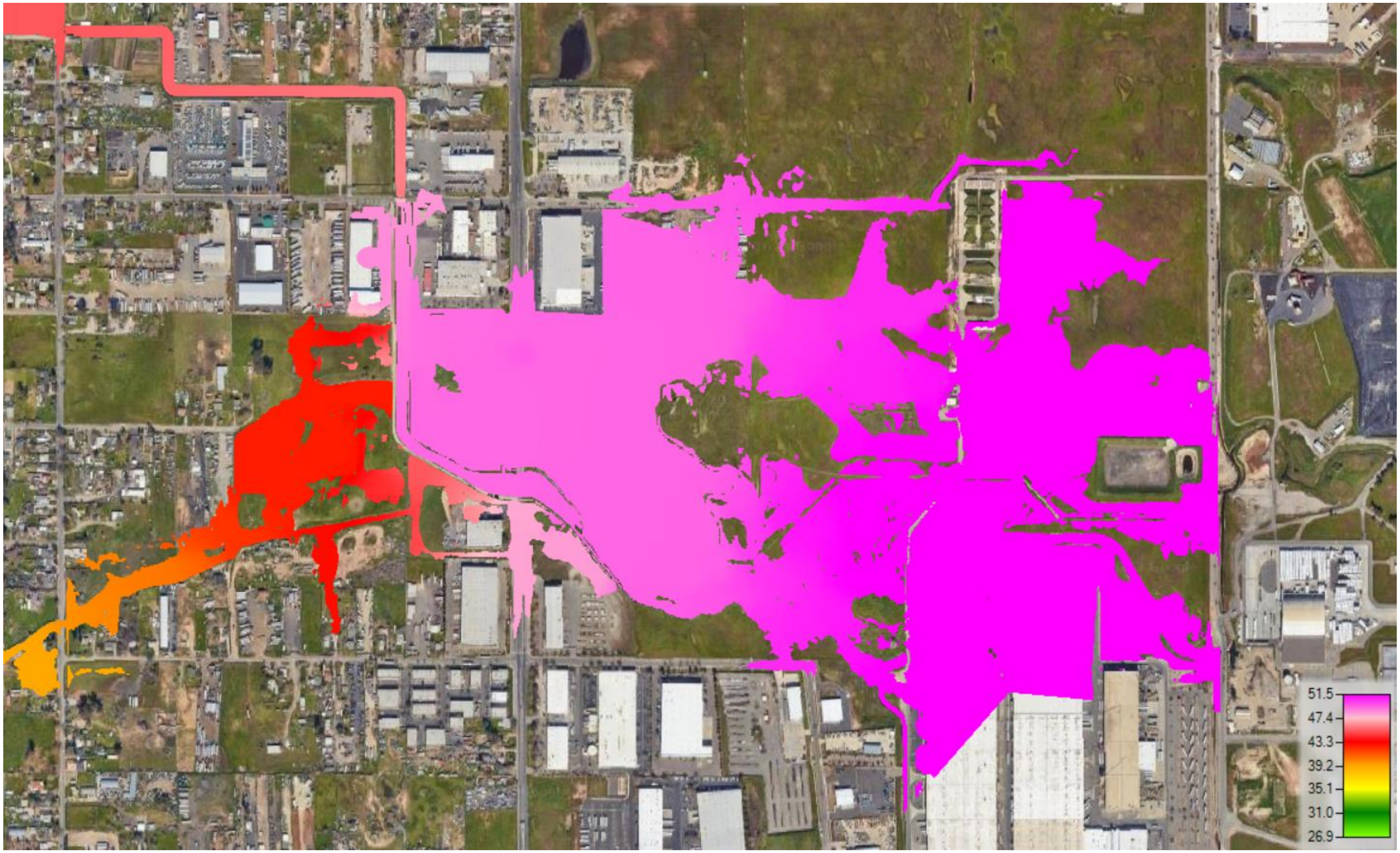

Figure 28: 0.2% (500 year) AEP Post-Project WSE – Intersection of Vinci & Raley

Figure 29: 50% (2 year) AEP Inundation Comparison – Intersection of Vinci & Raley

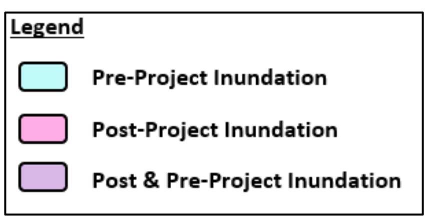

Figure 30: 10% (10 year) AEP Inundation Comparison – Intersection of Vinci & Raley

Legend

- Pre-Project Inundation
- Post-Project Inundation
- Post & Pre-Project Inundation

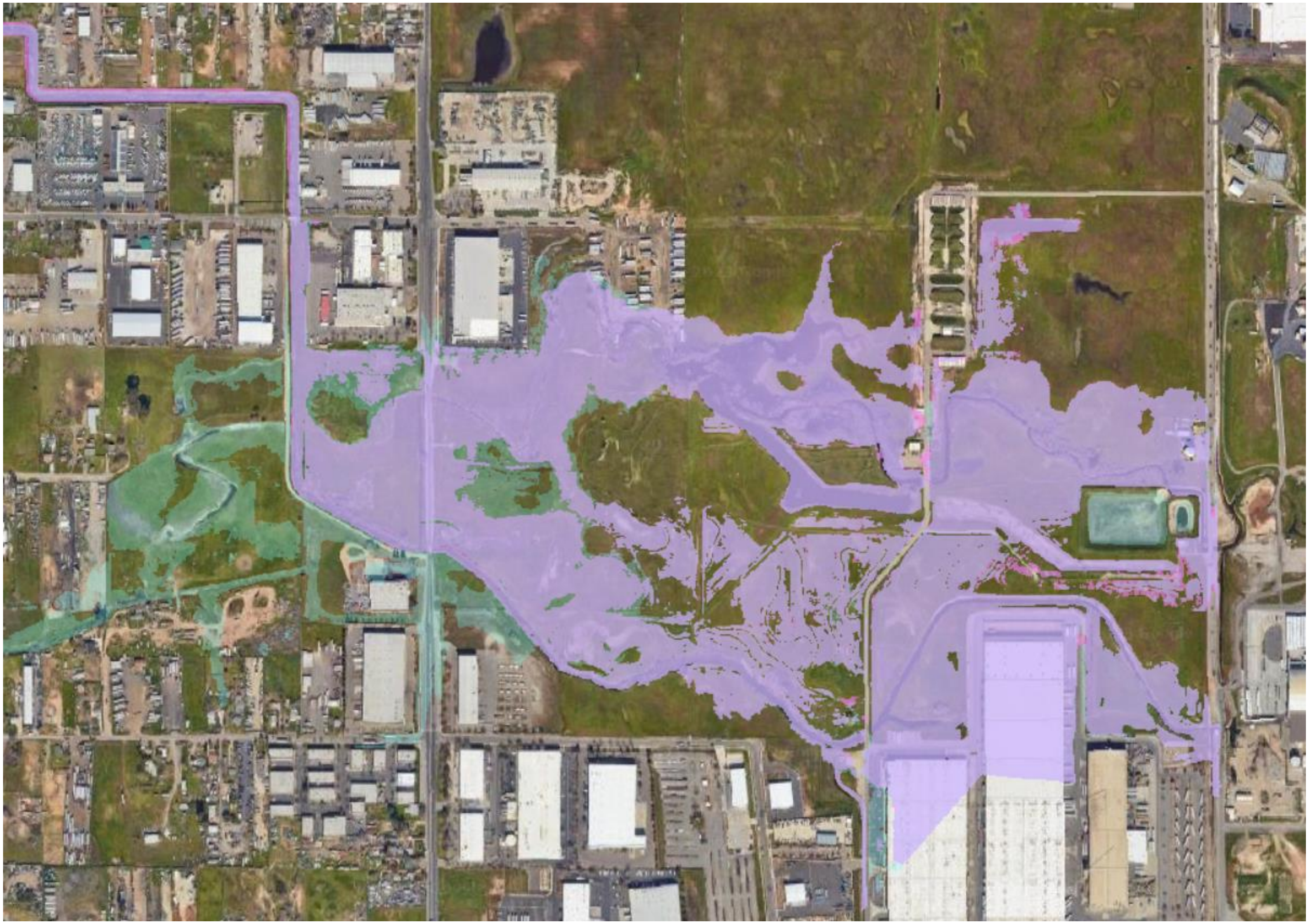

Figure 31: 4% (25 year) AEP Inundation Comparison – Intersection of Vinci & Raley

Legend

Pre-Project Inundation

Post-Project Inundation

Post & Pre-Project Inundation

Figure 32: 2% (50 year) AEP Inundation Comparison – Intersection of Vinci & Raley

Figure 33: 1% (100 year) AEP Inundation Comparison – Intersection of Vinci & Raley

Legend

Pre-Project Inundation

Post-Project Inundation

Post & Pre-Project Inundation

Figure 34: 0.5% (200 year) AEP Inundation Comparison – Intersection of Vinci & Raley

Legend

- Pre-Project Inundation
- Post-Project Inundation
- Post & Pre-Project Inundation

Figure 35: 0.2% (500 year) AEP Inundation Comparison – Intersection of Vinci & Raley

Legend

Pre-Project Inundation

Post-Project Inundation

Post & Pre-Project Inundation