DRAFT ENVIRONMENTAL IMPACT REPORT

WHITE ROCK NORTH MINE



Control Number: PLNP2021-00216
State Clearinghouse Number: 2022110169
March 2026

COUNTY OF SACRAMENTO

DEPARTMENT OF COMMUNITY DEVELOPMENT
PLANNING AND ENVIRONMENTAL REVIEW
827 7TH STREET, ROOM 225
SACRAMENTO, CALIFORNIA 95814

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This Environmental Impact Report has been prepared pursuant to the California Environmental Quality Act of 1970 (Public Resources Code Division 13). An Environmental Impact Report is an informational document which, when this Office requires its preparation, shall be considered by every public agency prior to its approval or disapproval of a project. The purpose of an Environmental Impact Report is to provide public agencies with detailed information about the effect that a proposed project is likely to have on the environment; to list ways in which any adverse effects of such a project might be minimized; and to suggest alternatives to such a project.

Prepared by the
COUNTY OF SACRAMENTO
DEPARMENT OF COMMUNITY DEVELOPMENT
PLANNING AND ENVIRONMENTAL REVIEW
827 7TH STREET, ROOM 225
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01 EXECUTIVE SUMMARY

The subject of this Environmental Impact Report (EIR) is a project known as White Rock North Mine. The purpose of an EIR is to evaluate the project's effects on environmental resources, both singularly and in a cumulative context, to examine alternatives to the project as proposed, and identify mitigation measures to reduce or avoid potentially significant effects. This document has been prepared in compliance with the California Environmental Quality Act (CEQA) (Sections 21000-21189 of the Public Resources Code) and the State CEQA Guidelines (Title 14, Sections 15000-15387 of the California Code of Regulations).

SUMMARY OF THE PROPOSED PROJECT

The project consists of a request for a Special Planning Area (SPA) Implementation Permit to allow aggregate mining on a 2,136± acre portion of the Aerojet Rocketdyne, Inc. (Aerojet) campus in unincorporated Sacramento County, California. The Project is located between Folsom Boulevard (to the north) and White Rock Road (to the south) and will be accessible from the intersection of White Rock Road and Nimbus Road (see Plate 1: Project Location and Plate 2: Project Site). As part of the Project, Granite proposes to mine and transport up to 25 million tons of sand and gravel over a period of approximately 20 years. Granite proposes a production limit of 3 million tons per year for aggregate mining.

For transport of mined materials, Granite proposes an off-site conveyor connection to the existing, separately permitted Grantline aggregate processing plant operated by Teichert (see Plate PD-3, Conveyor Connection). To facilitate this connection, a conveyor undercrossing would be developed by Teichert at White Rock Road. The Project includes land use and reclamation permitting for the portion of the conveyor on Aerojet property and the undercrossing at White Rock Road. However, any construction permitting for the portion of the conveyor connection south of White Rock Road would be separately addressed by Teichert.

The proposed surface mining uses are permitted in the Aerojet SPA (Sacramento County Ordinance No. SZC 95-0014, Zoning Code Section 508-300 *et. seq.)* and the Aerojet SPA Implementation Agreement Regarding Surface Mining (adopted by Resolution No. 2006-1180 dated August 29, 2006, see Appendix PD-3), subject to performance standards that include approval of a SPA Implementation Permit and Reclamation Plan.

Entitlements:

The Project will require the following Sacramento County entitlements:

- A **SPA Implementation Permit** to allow surface mining and reclamation on 2,136± acres for a period of 20 years, with an additional 3 years to complete

reclamation. The Applicant requests the ability to mine and transport up to 3 million tons per year, with an average anticipated production of 1.25 million tons per year. Pursuant to Section 1A of the SPA Implementation Agreement, the SPA Implementation Permit will incorporate the mining plan, serve as the vehicle for imposing conditions, be subject to CEQA review, and be reviewed by the Planning Commission and Board of Supervisors.

- A **Reclamation Plan** to include the end use of the mining area as undeveloped land and the end use of the conveyor area as native grassland..
- A **Work Authorization Permit** prior to commencement of any surface mining activities.
- A **Use Permit** for a 1± acre off-site conveyor connection and undercrossing at White Rock Road to transport mined materials to the existing, separately permitted off-site Teichert Grantline processing plant. Any permitting for the portion of the conveyor connection south of White Rock Road would be separately addressed by Teichert, if needed.
- A **Development Agreement** between the Applicant and the County of Sacramento.
- An **Encroachment Permit** and **Improvement Plans** as needed to allow installation of a conveyor undercrossing and driveway improvements along White Rock Road.

ORGANIZATION OF THIS DRAFT ENVIRONMENTAL IMPACT REPORT

The remainder of this document includes a detailed description of the project, analysis of potential environmental impacts that could result from project implementation, discussion of cumulative and growth-inducing impacts, and evaluation of potential alternatives to the project. This information is organized as detailed below.

Chapter 1, “Introduction,” provides important context, including the purpose and scope of this EIR; an overview of the public and environmental review process; and an outline of the intended use of this EIR.

Chapter 2, “Project Description,” describes the location of the project, project background, existing conditions in the plan area, and the nature and location of specific elements of the project.

Chapters 3–13 include a topic-by-topic analysis of impacts that would or could result from project implementation. Each chapter includes a discussion of the environmental and regulatory setting, impact analysis, and mitigation measures.

Chapter 14, “Alternatives,” describes feasible alternatives to the project, including the no project alternative, describing the consequences of taking no action.

Chapter 15, “Cumulative Impacts,” includes analysis of impact that is created by the combination of the project evaluated in the EIR together with other past, present, and reasonably foreseeable projects causing related impacts.

Chapter 16, “Other Resource Topics,” describes reasons that various possible effects of the proposed project were determined not to be significant, or to have no impact, and, therefore, are not discussed in detail in this EIR.

The appendices contain several reference items providing support and documentation of the analyses performed for this EIR.

Scoping Comments and Areas of Controversy

The scope and content of this EIR has been informed by comments received from other agencies in response to the revised notice of preparation released in November 2022 (see Appendix A). Generally, concerns raised in response to noticing included:

- potential impacts to surface water and groundwater quality, including permitting needs for construction stormwater, dewatering, and mining waste discharges,
- potential for mining operations to interfere with groundwater extraction, treatment systems, or future remedial actions,
- potential mining activities to conflict with ongoing Aerojet Superfund remedial actions,
- necessary protection, clearance, and potential relocation of existing SMUD infrastructure, and
- utility line routing, electrical load requirements, and cumulative electrical demand related to mining operations.

Terminology Used in this EIR

This Draft EIR uses the following terminology to describe environmental effects of the project.

Significance Criteria. A set of criteria used by the lead agency to determine at what level, or “threshold,” an impact would be considered significant. Significance criteria used in this EIR include those that are set forth in the CEQA Guidelines, or can be discerned from the CEQA Guidelines; criteria based on factual or scientific information; criteria based on regulatory standards of local, state, and federal agencies; and criteria based on goals and policies identified in the Sacramento County General Plan.

Less-than-Significant Impact. A project impact is considered less than significant when it does not reach the standard of significance and would therefore cause no substantial change in the environment. No mitigation is required for less-than-significant impacts.

Potentially Significant Impact. A potentially significant impact is a substantial, or potentially substantial, adverse change in the environment. Physical conditions which exist within the area will be directly or indirectly affected by the proposed project. Impacts may also be short-term or long-term. A project impact is considered significant if it reaches the threshold of significance identified in the EIR. Mitigation measures may reduce a potentially significant impact to less than significant.

Significant Unavoidable Impact. A project impact is considered significant and unavoidable if it is significant and cannot be avoided or mitigated to a less-than-significant level once the project is implemented.

Cumulative Significant Impact. A cumulative impact can result when a change in the environment results from the incremental impact of a project when added to other related past, present or reasonably foreseeable future projects. Significant cumulative impacts may result from individually minor but collectively significant projects.

Mitigation. Mitigation measures are revisions to the project that would minimize, avoid, or reduce a significant effect on the environment. CEQA Guidelines §15370 identifies 5 types of mitigation:

a) Avoiding the impact altogether by not taking a certain action or parts of an action.

b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.

d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

e) Compensating for the impact by replacing or providing substitute resources or environments.

MITIGATION MONITORING AND REPORTING PROGRAM

It shall be the responsibility of the project applicant to reimburse the County for all expenses incurred in the implementation of the Mitigation Monitoring and Reporting Program (MMRP), including any necessary enforcement actions. The applicant shall pay an initial deposit of **$15,000.00**, which includes administrative costs of **$1,097.00**. Over the course of the project, the Planning and Environmental Review will regularly

conduct cost accountings and submit invoices to the applicant when the County monitoring costs exceed the initial deposit.

Until the MMRP has been recorded and the administrative portion of the MMRP fee has been paid, no encroachment, grading, building, sewer connection, water connection or occupancy permit from County of Sacramento shall be accepted for review or be reviewed.

SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

The following environmental impact and mitigation summary table (Table ES-1) briefly describes the project impacts and the mitigation measures recommended to eliminate or reduce the impacts. The residual impact after mitigation is also identified. Immediately following the summary table is a list of recommendations/requirements of various agencies pertaining to the project, and a description of mandated mitigation monitoring requirements. Detailed discussions of each of the identified impacts and mitigation measures, including pertinent support data, can be found in the specific topic chapters in the remainder of this report.

Table ES-1: Executive Summary of Impacts and Mitigation

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
AESTHETICS			
Impact AE-1: Does the Project substantially degrade the existing visual character or quality of the site and its surroundings?	LS	No mitigation is required.	LS
Impact AE-2: Does the Project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	PS	**Mitigation Measure AE-2: Light and Glare** If construction of the Easton Specific Plan resulting in construction of public roads or sensitive uses within 500 feet of the project boundary prior to mining activities being initiated in Phase 2, a Lighting Plan shall be prepared in accordance with the requirements of County zoning code section 4.8.11.K. The lighting plan shall demonstrate that neither public rights-of-way nor adjacent properties will be significantly illuminated during aggregate mining operations. The lighting plan shall describe site-specific standards including a requirement that a minimum of 90 percent of the light shall be projected downward and within the mining site boundaries. Shielding will be used, as needed, to minimize glare and to minimize light projection into the sky. The direct source of the lighting (bulb, lens, filament, tube, etc) shall not be visible off site and the lighting shall be installed as low as possible on poles and/or	LS

[1] PS = Potentially Significant S = Significant SU = Significant and Unavoidable LS = Less Than Significant

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		structures as to minimize reflected light pollution of the night sky. The candle power of the illumination at ground level and the height and angle of lighting shall not exceed what is required by any safety or security regulations of any government agency with regulatory oversight of the mining operation including, but not limited to, California Department of Industrial Relations, Division of Occupational Health and Safety, and the United Stated Department of the Labor, Mine Safety and Health Administration. Prior to installation of any permanent lighting structures, the Applicant shall prepare and submit to PER a final Lighting Plan providing the location, type, and lumens of the lighting to be constructed.	
AIR QUALITY			
Impact AQ-1: Conflict with Or Obstruct Implementation Of An Applicable Air Quality Plan	LS	No mitigation is required.	LS
Impact AQ-2: Increase of any Criteria Pollutant for Which the Project Region is Non-Attainment	PS	**Mitigation Measure AQ-1 – Basic Construction Emissions Control Practices** The project shall implement the SMAQMD Basic Construction Emission Control Practices (BMPs), including: a. Control of fugitive dust is required by District Rule 403 and enforced by District staff. b. Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited	SU

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		to soil piles, graded areas, unpaved parking areas, staging areas, and access roads. c. Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered. d. Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited e. Limit vehicle speeds on unpaved roads to 15 mph. f. All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. g. Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site. h. Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulations [California Code of	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		Regulations, Title 13, sections 2449 and 2449.1]. i. Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated. **Mitigation Measure AQ-2 – Enhanced Fugitive PM Dust Control Practices** The project shall implement the SMAQMD's Enhanced Fugitive PM Dust Control Practices, which include: a. For soil disturbance areas: i. Water exposed soil with adequate frequency for continued moist soil. However, do not overwater to the extent that sediment flows off the site. ii. Suspend excavation, grading, and/or demolition activity when wind speeds exceed 20 mph. iii. Install wind breaks (e.g., plant trees, solid fencing) on windward side(s) of construction areas. iv. Plant vegetative ground cover (fast-germinating native grass seed) in disturbed areas as soon as possible.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		Water appropriately until vegetation is established. b. For unpaved roads: i. Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site. ii. Treat site accesses to a distance of 100 feet from the paved road with a 6 to 12-inch layer of wood chips, mulch, or gravel to reduce generation of road dust and road dust carryout onto public roads. iii. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of the District shall also be visible to ensure compliance. **Mitigation Measure AQ-3 – Enhanced On-Site Exhaust Controls** The project shall implement the SMAQMD's Enhanced On-Site Exhaust Controls (with annual reporting, appropriate for mining projects) as follows: The project applicant, or its designee, shall provide a plan for approval by the SMAQMD that demonstrates the heavy-duty off-road vehicles (50 horsepower or more) to be used 8 hours or more during the mining project will achieve a project-wide fleet average of	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		10% NO_X reduction compared to the CARB fleet average for the calendar year the mining activity will occur. [Acceptable options for reducing emissions may include use of cleaner engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and / or other options as they become available.] The plan shall have three components: an initial report submitted before mining activities begins, annual reports of actual equipment usage, and then a final report when the project has concluded. • Submit the initial report at least four (4) business days prior to the start of mining activity using the Sac Metro Air District's Construction Mitigation Tool (http://www.airquality.org/businesses/ceqa-land-use-planning/mitigation). • Provide project and company information. • Include the equipment type, horsepower rating, engine model year, projected hours of use, and the CARB equipment identification number for each piece of equipment in the plan. Incorporate all owned, leased and subcontracted equipment to be used. • Submit the annual report of the previous calendar year activity by March 1st. • Submit the final report at the end of the project, as pre-arranged with Sac Metro Air District staff and documented in the approval	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		letter, to demonstrate continued project compliance. The SMAQMD may conduct periodic site inspections to determine compliance. Nothing in this mitigation shall supersede other air district, state or federal rules or regulations.	
Impact AQ-3: Expose Sensitive Receptors to Substantial Pollutant Concentrations	LS	No mitigation is required.	LS
Impact AQ-4: Results in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People	LS	No mitigation is required.	LS
BIOLOGICAL RESOURCES			
Impact BR-1: Would The Project Have A Substantial Adverse Effect, Either Directly Or Through Habitat Modifications, On Any Species Identified As A Candidate, Sensitive, Or Special Status Species In Local Or Regional Plans, Policies, Or Regulations Or By CDFW Or USFWS	PS	**Mitigation Measure BR-1a: Implement Construction Best Management Practices to Avoid and Minimize Potential for Ground-Disturbing Activity-Related Impacts on Special-Status Plants and Wildlife.** Project Proponent shall implement the following Best Management Practices. 1. **Construction Fencing**. Orange construction fencing or equivalent, shall be installed to ensure that ground disturbance does not extend beyond the allowed disturbance footprint (i.e., the limit of project disturbance plus equipment staging areas, vehicle	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		parking, materials storage, and access roads). The fencing shall remain in place until project completion for that phase. 2. **Erosion Control**. Before implementing ground-disturbing activities, temporary control measures for sediment, stormwater, and pollutant runoff shall be installed to protect water quality and species habitat. Silt fencing or other appropriate sediment control device(s) shall be installed downslope of any activities that disturbs soils. Fiber rolls and seed mixtures used for erosion control shall be free of viable noxious weed seed. Erosion controls installed in or adjacent to known or potential habitat for western pond turtle and western spadefoot must be of appropriate design and materials that shall not entrap the species (e.g., not contain mesh netting). Regular monitoring and maintenance of the project's erosion control measures shall be conducted until project completion to ensure effective operation of erosion control measures. 3. **Equipment Storage and Fueling**. During ground-disturbing activities, equipment storage and staging shall occur only in designated areas of the development footprint. Fuel storage and equipment fueling shall occur a minimum of 100 feet away from waterways, stream	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		channels, stream banks, and other environmentally sensitive areas within the development footprint. If ground-disturbing activities result in a spill of fuel, hydraulic fluid, lubricants, or other petroleum products, the spill shall be absorbed, and waste disposed of in a manner to prevent pollutants from entering a waterway or stream setback. 4. **Erodible Materials**. Ground-disturbing activities must not deposit erodible materials into waterways; vegetation clippings, brush, loose soils, or other debris material shall not be stockpiled within stream channels or on adjacent banks. Erodible material must be disposed of such that it cannot enter a waterway, stream setback or aquatic land cover type. If water and sludge must be pumped from a subdrain or other structure, the material shall be conveyed to a temporary settling basin to prevent sediment from entering a waterway. 5. **Dust Control**. During ground-disturbing activities, active construction sites shall be watered regularly, if warranted, to avoid or minimize impacts from dust on adjacent vegetation and wildlife habitats. No surface water shall be used from aquatic land covers and water shall be	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		obtained from a municipal source or approved existing groundwater well. 6. **Construction Lighting**. All temporary lighting (e.g., lighting used for security or occasional nighttime equipment maintenance or other limited scope of work such as to avoid extreme heat) shall be directed away from adjacent natural habitats, and particularly riparian and wetland habitats and wildlife movement areas. 7. **Biological Monitor**. A qualified biological monitor shall be on-site during ground-disturbing activities as needed, as described below in Mitigation Measure BR-1b through BR-1n. 8. **Training of Mining and Construction Staff**. A mandatory Worker Environmental Awareness Program (WEAP) shall be conducted by a qualified biologist for all mining workers, including contractors, prior to the commencement of ground-disturbing activities. The training shall include how to identify special-status species that might enter the mining site, relevant life history information and habitats, statutory requirements and the consequences of non-compliance, the boundaries of the mining area and permitted disturbance	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		zones, and appropriate protocols if a special-status species is encountered. a. Supporting materials containing training information shall be prepared and distributed by the qualified biologist. When necessary, training and supporting materials shall also be provided in Spanish. Upon completion of training, mining personnel (and contractors if applicable) shall sign a form stating that they attended the training and understand all avoidance and minimization measures. 9. **Speed Limit**. Project-related vehicles shall observe the posted speed limits on paved roads and a 10-mile-per-hour speed limit on unpaved roads and during travel in project areas. Mining workings and contractors shall be given weekly tailgate instruction to travel only on designated and marked existing, cross-country, and project-only roads. 10. **Litter Removal Program**. A litter control program shall be instituted for the entire project site. All workers shall ensure that their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		containers. All garbage shall be removed from the project site at the end of each workday, and all personnel shall not feed or otherwise attract wildlife to the area where construction and mining activities are taking place. 11. **No Pets in Construction Areas**. To avoid harm and harassment of native species, workers and visitors shall not bring pets onto a project site (not including service animals). 12. **Prevent Invasive Species Spread**. Project implementation activities shall be conducted in a manner that avoids the spread of invasive species. Such prevention measures shall include the following: a. Before bringing any equipment onto the project site, equipment must be cleaned of mud, dirt, and plant material. b. Ground-disturbing activities shall start in un-infested areas and move to infested areas to the maximum extent feasible. Where work must occur in infested areas, equipment must be cleaned of any mud, dirt, and plant material before moving into un-infested areas; or the project	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		proponent shall apply an appropriate manual, mechanical, or chemical (if authorized) treatment in accordance with County and State regulations prior to working in infested areas. c. Invasive plant prevention techniques shall be incorporated into operations plans. **Mitigation Measure BR-1b *Avoid and Minimize Impacts on Rare Plant Species*** Adequate measures shall be taken to avoid inadvertent take of Sanford's arrowhead and other special-status plants by implementing the following steps. 1. Prior to the start of ground-disturbing activities, including clearing and grubbing, and/or grading, a qualified biologist shall conduct a properly timed special-status plant survey for Sanford's arrowhead and other special status plants within the species' suitable habitat within the project work limits. The survey will follow the CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Plan Populations and Sensitive Natural Communities* (CDFW, 2018), or the most recent guidelines. 2. If the survey concludes that Sanford's arrowhead or other special-status plant	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		species are present within the project work limits, the biologist shall establish an adequate buffer area for each plant population to exclude activities that directly remove or alter the habitat of, or result in indirect adverse impacts on, the special-status plant species. A qualified biologist shall oversee installation of a temporary, plastic mesh-type construction fence (Tensor Polygrid or equivalent) at least 4 feet (1.2 meters) tall around any established buffer areas to prevent encroachment by construction vehicles and personnel. The qualified biologist shall determine the exact location of the fencing. The fencing will be strung tightly on posts set at maximum intervals of 10 feet (3 meters) and will be checked and maintained weekly until all construction is complete. The buffer zone established by the fencing will be marked by a sign stating: "This is habitat of [list rare plant(s)] and must not be disturbed. This species is protected by [the Endangered Species Act of 1973, as amended / California Endangered Species Act / California Native Plant Protection Act]." 3. As required by the CDFW *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities*, a qualified botanist shall	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		determine the potential presence and distribution of sensitive natural communities. 4. If direct impacts on special-status plants cannot be avoided, the project applicant shall prepare a plan for the County's review minimizing the impacts by one or more of the following methods: (1) salvage and replant plants at the same location following construction; (2) salvage and relocate the plants to a suitable off-site location with long-term assurance of site protection; (3) collect seeds or other propagules for reintroduction at the site or elsewhere; or (4) payment of compensatory mitigation, e.g., to a mitigation bank. As necessary, all necessary approvals from USFWS/CDFW will be obtained for any impacts to special-status plant species protected under FESA or CESA. 5. The success criterion for any seeded, planted, and/or relocated plants shall be full replacement at a 1:1 ratio after five years. Monitoring surveys of the seeded, planted, or transplanted individuals shall be conducted annually for a minimum of five years to ensure that the success criterion can be achieved at year five. Monitoring reports shall be submitted to the County. If it appears the success criterion would not be met after five	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		years, contingency measures may be applied. Such measures shall include but are not limited to additional seeding and planting; altering or implementing weed management activities; or introducing or altering other management activities. **Mitigation Measure BR-1c: Avoid, Minimize, and Mitigate for Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp** 1. Implement Mitigation Measure BR-1a (Construction Best Management Practices) a. Federally listed vernal pool branchiopod species shall be included in the WEAP discussed under “Training of Mining and Construction Staff” in Mitigation Measure BR-1a. 2. Unless a smaller buffer is approved through formal consultation with USFWS, construction fencing shall be installed a minimum of 250 feet from the delineated wetland edge of any potentially suitable aquatic habitats (e.g., vernal pools, seasonal wetlands) for vernal pool fairy shrimp and vernal pool tadpole shrimp. All construction and operations activities are prohibited within this buffer area. If	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		total avoidance is achieved, no further action is required. 3. If avoidance, as described above, is not feasible, implement Mitigation Measure BR-3 to achieve the performance standard of no net loss of State and Federally Protected Wetlands, including vernal pool habitat acreage, function, and values for vernal pool fairy shrimp and vernal pool tadpole shrimp. Direct and indirect effects to on-site suitable aquatic habitats that may support federally listed vernal pool branchiopods shall be offset through on-site preservation and/or the purchase of tadpole shrimp and fairy shrimp species preservation credits from a USFWS-approved in-lieu fee program or other USFWS-approved conservation or mitigation bank. These effects and compensation will be quantified in the Aquatic Resources Mitigation Plan provided by the project applicant. The mitigation ratios shall, at minimum, comply with applicable mitigation ratios in terms and conditions of biological opinion issued by USFWS pursuant to section 7 of the Endangered Species Act. **Mitigation Measure BR-1d: Avoid, Minimize, and Mitigate for Impacts on Valley Elderberry Longhorn Beetle (VELB) and Their Habitat** In order to reduce project impacts to the VELB habitat to a less than significant level the following	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		mitigation measures, consistent with USFWS Conservation Guidelines for the Valley Elderberry Longhorn Beetle, will be required: 1. Worker Training: a. Implement Mitigation Measure BR-1a (Construction Best Management Practices) i. This species shall be included in the WEAP discussed under "Training of Mining and Construction Staff" in Mitigation Measure BR-1a. 2. Avoidance: a. Unless otherwise approved through consultation with USFWS as outlined below in this mitigation measure, temporary construction fencing and flagging shall be installed at least 165 feet outside the edge of the driplines of the elderberry plants. In areas where encroachment within the 165-foot buffer has been approved by USFWS, provide a minimum setback of at least 20 feet from the dripline of each elderberry plant and provide documentation of	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		USFWS approval of the reduced setback. b. Timing. All project-related activities that could occur within 165 feet of an elderberry plant shall be conducted outside of the flight season of the valley elderberry longhorn beetle (i.e., March through July) to the maximum extent feasible. c. Trimming. Trimming may remove or destroy valley elderberry longhorn beetle eggs and/or larvae and may reduce the health and vigor of the elderberry plant. Therefore, to avoid and minimize direct impacts to valley elderberry longhorn beetle, trimming shall occur between November and February and shall avoid the removal of any branches or stems that are greater than 1 inch in diameter. Measures to address regular and/or large-scale maintenance (trimming) shall be established and approved by USFWS. d. Mowing. Mechanical weed removal within the dripline of any elderberry plant shall be limited to the season when adult valley elderberry longhorn beetles are	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		not active (i.e., August through February) and shall avoid damage to the elderberry plant. e. Construction Monitoring. A qualified biologist shall monitor mining activities if work would occur within the 165-foot avoidance buffer to ensure that all avoidance and minimization measures are implemented, as applicable. The amount and duration of monitoring shall depend on the project specifics and shall be discussed with USFWS. 3. Compensation for Impacts to Elderberry: a. Prior to ground-disturbing activities within the 165-foot buffer area (or lesser buffer, as approved by USFWS) established around the elderberry plants, the project applicant shall consult with USFWS to determine the appropriate type and amount of compensatory mitigation required. The project applicant shall mitigate for the loss of elderberry plants on the site to the satisfaction of the USFWS and shall obtain any/all	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		applicable permit(s) from the USACE and the USFWS. **Mitigation Measure BR-1e: Avoid, Minimize, and Mitigate for Impacts on Western Spadefoot.** 1. Implement Mitigation Measure BR-3 2. Implement Mitigation Measure BR-1a (Construction Best Management Practices) a. Western Spadefoot shall be included in the WEAP discussed under “Training of Mining and Construction Staff” in Mitigation Measure BR-1a. b. In addition, if erosion control (described in Mitigation Measure BR-1a) is implemented, non-entangling erosion control material shall be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material shall be used to ensure that western spadefoots are not trapped (i.e., no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		3. Avoid Aquatic Habitat Where Feasible or Implement Work Window. Where feasible, temporary construction fencing shall be installed a minimum of 250 feet from the delineated wetland edge of any potentially suitable aquatic habitats (e.g., vernal pools, seasonal wetlands) for western spadefoot. All construction and operations activities are prohibited within this buffer area. If avoidance of potential aquatic habitats, as described, is not feasible, project ground-disturbing activities within such areas (including overland driving of vehicles and equipment) shall be restricted to the Western Spadefoot Work Window unless otherwise provided in this measure (see below). 4. Western Spadefoot Work Window. To the extent feasible, project ground-disturbing activities (including overland driving of vehicles and equipment) within suitable habitat for western spadefoot (e.g., grassland, woodland) shall occur outside of this species' breeding and dispersal seasons (i.e., work to occur after May 15 and before October 15). 5. Pre-construction Survey. If project ground-disturbing activities must be implemented in potentially suitable habitat for this species during the breeding and dispersal season (October	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		15 to May 15), activities shall not start until 30 minutes after sunrise and must be completed 30 minutes prior to sunset. In addition, a qualified biologist shall conduct a pre-construction survey of the active work areas (including access roads) for western spadefoot prior to initial ground disturbance and prior to work activities in mornings following measurable precipitation events. The survey will include searching small mammal burrows, crevices, and other potential refugia, as well as underneath equipment and inside uncapped stored pipes that are 3 cm (1.2 inches) or greater in diameter. Construction may commence once the biologist has confirmed that no spadefoots are in the work area. If western spadefoot is encountered, refer to Spadefoot Encounter Protocol, below. 6. Construction Monitoring. If project ground-disturbing activities must be implemented in potentially suitable habitat for this species during the breeding and dispersal season (October 15 to May 15), a qualified biologist experienced with western spadefoot identification and behavior shall monitor initial ground-disturbing activities within the mining area. The qualified biologist shall be on-site daily while initial construction-related activities are taking	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		place and shall inspect the area for these species every morning prior to construction activities. The qualified biologist shall also train construction personnel on the required species avoidance procedures, and correct protocols in the event that a western spadefoot enters an active construction zone. If western spadefoot is encountered, refer to Spadefoot Encounter Protocol, below. 7. Spadefoot Entrapment Avoidance. All excavated steep-walled holes or trenches more than six inches deep shall be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks (maximum 2:1 slope) at the end of each workday or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes or trenches shall be inspected by the qualified biologist each morning prior to and each evening after work activities for the day to ensure that no wildlife has become entrapped and/or to relocate any wildlife that may have become trapped to suitable habitat outside the construction area; relocation would take place only by a qualified biologist with appropriate handling permits. All construction pipes, culverts, similar structures, construction equipment, and construction debris left	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		overnight within potential habitat shall be inspected for western spadefoot by the qualified biologist prior to being moved. If western spadefoot is encountered, refer to protocol, below. 8. Spadefoot Encounter Protocol. If a western spadefoot is encountered during project activities, the qualified biologist shall notify CDFW and any other appropriate responsible Agency (e.g., USFWS if the species has become federally listed) immediately. Project activities shall be suspended within a 100-foot radius of the animal until the animal moves out of the work area on its own volition, or is relocated by a qualified biologist with appropriate handling permits. Prior to relocation, the qualified biologist shall notify CDFW and USFWS (if relevant) to determine the appropriate procedures related to relocation. If the animal is handled, a report shall be submitted within one business day to CDFW and USFWS (if relevant) that includes the date, location, habitat description, circumstances requiring the animal to be handled, and any additional measures taken to further protect western spadefoot. Any worker who inadvertently injures or kills a western spadefoot or who finds any individual(s) dead, injured, or entrapped must immediately report the incident to the	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		qualified biologist. The biologist shall report any take (i.e., injury or mortality) of listed species to CDFW and USFWS (if relevant) immediately. **Mitigation Measure BR-1f: Avoid, Minimize, and Mitigate for Impacts on Western Pond Turtle** 1. Implement Mitigation Measure BR-3 2. Implement Mitigation Measure BR-1a (Construction Best Management Practices) a. Western Pond Turtle shall be included in the WEAP discussed under “Training of Mining and Construction Staff” in Mitigation Measure BR-1a. b. In addition, if erosion control (described in Mitigation Measure BR-1a) is implemented, non-entangling erosion control material shall be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material shall be used to ensure that western pond turtles are not trapped (i.e., no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		acceptable erosion control materials. 3. Avoid Aquatic Habitat Where Feasible. Where feasible temporary construction fencing shall be installed a minimum of 300 feet from the potential suitable aquatic habitat for northwestern pond turtle (e.g., streams, ponds, freshwater emergent wetlands, etc.). All construction and operations activities shall be prohibited within this buffer area, or implement the Western Pond Turtle Work Window (see below). 4. Western Pond Turtle Work Window. For any project-related activities that occur within 300 feet of suitable aquatic habitat, project ground-disturbing activities shall, to the maximum extent feasible, be conducted outside of western pond turtle's active season (i.e., work to occur after May 1 and before September 15). If project activities must be implemented during the breeding and dispersal season, they shall not start until 30 minutes after sunrise and must be completed 30 minutes prior to sunset. 5. Western Pond Turtle Pre-Construction Survey. A qualified biologist shall conduct a pre-construction survey for western pond turtle within 48 hours prior to the start of construction activities	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		within 300 feet of suitable aquatic habitat. Concurrently with the pre-construction survey, assessments for active nesting pits and/or wintering site (e.g., burrows) shall be conducted and any identified sites shall be delineated with high visibility flagging or fencing and avoided during construction activities. 6. Western Pond Turtle Encounter Protocol. If a western pond turtle, active nesting pits, and/or active wintering sites are encountered during the pre-construction survey a qualified biologist shall be present during grubbing and clearing activities in suitable habitat to monitor for western pond turtle. If a turtle is observed in the active construction zone, project activities shall be suspended within a 100-foot radius of the animal until the animal moves out of the work area on its own volition. If necessary, the qualified biologist shall notify CDFW to determine the appropriate procedures related to relocation to nearby suitable habitat. If the animal is handled, a report shall be submitted within one business day to CDFW that includes the date, location, habitat description, circumstances requiring the animal to be handled, and any additional measures taken to further protect western pond turtle. Any worker who inadvertently injures or kills a western pond turtle or who finds one	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		dead, injured, or entrapped must immediately report the incident to the qualified biologist. 7. Work in Aquatic Habitat, Dewatering and Exclusion. If avoidance of potential aquatic habitats, as described above, is not feasible, scheduled work activities when habitat is naturally dry (e.g., in seasonal aquatic habitats). If project activities must occur in suitable aquatic habitat that is wetted, the following shall be implemented: The wetted aquatic habitat shall be dewatered and remain dry and absent of aquatic prey (e.g., crustaceans and other aquatic invertebrates) for a minimum of 15 days prior to the initiation of construction activities. If complete dewatering is not possible, CDFW shall be contacted to determine what additional measures may be necessary to minimize effects to western pond turtle. After aquatic habitat has been dewatered for a minimum of 15 days, exclusion fencing shall be installed extending a minimum of 300 feet into adjacent uplands to isolate both the aquatic and adjacent upland habitat within work area boundaries. Exclusionary fencing shall be erected 36 inches above ground and buried at least 6 inches below the ground to prevent any western pond turtles from attempting to burrow or move under the fence into the	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		work area. In addition, high-visibility fencing shall be erected to identify work area limits and to protect adjacent habitat from encroachment of personnel and equipment. Western pond turtle habitat outside exclusionary fencing shall be avoided by all construction or maintenance personnel. The fencing and work area shall be inspected by a qualified biologist before the start of each workday and periodically throughout each workday to ensure that the fencing is intact and that no western pond turtles have entered the work area. Fencing shall be maintained by the contractor or maintenance entity until completion of the work, upon which it shall be completely removed. If, after exclusion fencing and dewatering, western pond turtles are found within the work area, the qualified biologist shall contact CDFW to discuss the next best steps such as the relocation of the individual(s) to suitable aquatic habitat outside the exclusion fencing. **Mitigation Measure BR-1g: Avoid, Minimize, and Mitigate for Impacts on Swainson's hawk** 1. During the year of project commencement, and each subsequent year in which project activities occur during the nesting season (e.g., March 1 through September 15), a qualified biologist shall conduct preconstruction	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		surveys in accordance with *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Tech. Advisory Committee 2000); to meet the minimum level of protection for the species, surveys shall be required during the two (2) survey periods immediately preceding the commencement of construction activities. If no active nests are found during the focused survey, no further mitigation will be required. 2. Consistent with CDFW's recommendations identified in their Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California (CDFG 1994), if nesting Swainson's hawk are identified within a 0.5-mile of the project site during preconstruction Swainson's nesting surveys described above or at any point during project activities, ongoing monitoring by a qualified biologist shall be required to ensure there are no unauthorized impacts to this species and its habitat; typically a 0.25- to 0.5-mile buffer of an active nest site shall be implemented during the nesting season (e.g., March 1 through September 15) until the young have fledged to avoid agitation to the nest. The requirement for monitoring shall be	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		determined in consultation with CDFW biologists after they are notified of any nesting Swainson's hawk). 3. If impacts on Swainson's hawk individuals cannot be fully avoided, obtain an incidental take permit from CDFW for anticipated take of Swainson's hawk nesting sites and foraging habitat and for potential project-related take of individuals. 4. The project proponent shall avoid removal of known active Swainson's hawk nest trees to the maximum extent practicable. "Active Swainson's hawk nest(s)" are defined in the *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California (CDFW, 1994), as "used during one or more of the last 5 years".* Compensation shall be provided for the permanent loss of Swainson's hawk nesting habitat, including removal of known active nest sites/trees (if the removal of known active nest sites/trees cannot be feasibly avoided), to achieve a performance standard of no net loss of habitat acreage, function and values to Swainson's hawk through implementation of a Tree Resource Revegetation Plan (see Mitigation Measure BR-2). A Tree Resource	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		Compliance and Mitigation Memorandum has been drafted by the Applicant for this purpose and shall be updated to meet the requirements identified herein for the Tree Resource Revegetation Plan for approval of the County prior to project-related tree removal. **Mitigation Measure BR-1h Avoid and Minimize Impacts on Burrowing Owl (BUOW)** 1. Project proponent shall conduct a BUOW survey over all suitable habitat present within the project area. BUOW surveys shall be conducted by a qualified biologist in accordance with the protocol described in the *Staff Report on Burrowing Owl Mitigation* (CDFW, March 7, 2012). If possible, surveys should be conducted during both the breeding (February 1 – August 31) and non-breeding seasons (September 1 – January 31) immediately preceding the planned start of construction activities to ascertain the seasonal residency status of any owls occupying the site. The presence of BUOW or their sign anywhere on the site, or within a 500-foot accessible radius around the project site, shall be recorded and mapped. Surveys shall disclose all burrows and occurrence of signs of BUOW on the project site and within the 500-foot buffer. Results of the survey shall be submitted to the County.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		2. During the breeding season (February 1 to August 31), surveys shall document whether BUOW are nesting in or within 500 feet of the Project area. During the non-breeding season (September 1 to January 31), surveys shall document whether BUOW are using habitat in or directly adjacent to any area to be disturbed. Survey results shall only be valid for the season (breeding or non-breeding) during which the survey was conducted. If a lapse in project-related work of fifteen (15) calendar days or longer occurs, another focused survey shall be conducted and the results submitted to the County before project work can be reinitiated. If a BUOW or evidence of presence at or near a burrow entrance is found to occur within 500 feet of the project site, the following measures shall be implemented: a. If BUOW are found during the non-breeding season (approximately September 1 to January 31), the project proponent shall establish a minimum 160-foot (50-meter) buffer zone around active burrows. The buffer zone shall be flagged or otherwise clearly marked. Measures such as visual screens may be used to further reduce the buffer with	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		CDFW approval and provided a qualified biologist confirms that such measures do not cause agitated behavior. b. If BUOW are found during the breeding season (approximately February 1 to August 31), the project proponent shall: i. Avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young (occupation includes individuals or family groups foraging on or near the site following fledging). ii. Establish a minimum 500-foot non-disturbance buffer zone around nests, unless otherwise approved by the County in writing, in consultation with CDFW. The buffer zone shall be flagged or otherwise clearly marked. Should construction activities	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		cause the nesting bird to vocalize, make defensive flights at intruders, or otherwise display agitated behavior, then the exclusionary buffer will be increased such that activities are far enough from the nest so that the bird(s) no longer display this agitated behavior. Construction shall only occur within the 500-foot buffer zone during the breeding season if a qualified biologist monitors the nest and determines that the activities do not disturb nesting behavior, or the birds have not begun egg-laying and incubation, or that the juveniles from the occupied burrows have fledged and moved off site. Any modifications to this buffer shall be approved by the County, in consultation with CDFW prior to its implementation. The buffer reduction request	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		shall include relevant information and/or propose new measures to justify the buffer reduction. The buffer area must be clearly marked to prevent project-related activities from occurring within the buffer zone. 3. If eviction of BUOW is necessary, the following measure shall apply: a. If after all applicable avoidance and minimization measures are implemented and the project proponent needs to evict BUOW, an Incidental Take Permit (ITP) shall be obtained for the activity and a BUOW eviction plan shall be developed by a qualified biologist for the County's review and approval, in consultation with CDFW. This plan, including its proposed mitigation, shall be consistent with the most recent available guidelines (e.g., *2012 Staff Report on Burrowing Owl Mitigation*). Burrow eviction shall only be conducted during the non-breeding season for burrows located in the project footprint, and in limited instances within a	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		buffer zone around the project site, as determined by the County in consultation with CDFW after all avoidance and minimization measures have been exhausted. **Mitigation Measure BR-1i: Avoid, Minimize, and Mitigate for Impacts on Tricolored Blackbird** 1. To the maximum extent feasible, clearing, grubbing, removal, and/or disturbance (e.g., trimming) to any vegetation that is suitable tricolored blackbird nesting habitat shall be performed outside of the nesting season (September through March) to avoid impacts to nesting birds. If vegetation disturbance/removal cannot be avoided during the nesting season for this species, the following measures shall be implemented. 2. A qualified biologist shall conduct a preconstruction survey for nesting tricolored blackbird approximately two days prior to vegetation or tree removal or ground-disturbing activities during the nesting season (approximately April through August). The survey shall cover the limits of mining activities and suitable nesting habitat within 500 feet.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		3. If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance (i.e., non-disturbance) buffer from the active nest. The buffer distance for tricolored blackbird shall generally be 500 feet and shall be determined based on factors such as topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of mining shall be established in the field with flagging, fencing, or other appropriate barriers to avoid active nests. Mining limits shall be based on the biologist-defined appropriate buffer distance and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. 4. If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days elapse between the survey and vegetation removal activities. 5. If an active nest is identified within 500 feet of the work area after mining has started, work within 500 feet of the nest shall be suspended until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		mining. Appropriate measures may include a no-disturbance buffer until the birds have fledged, limitations on mining activities that generate substantial vibration and/or noise, and/or full-time monitoring by a qualified biologist during mining activities conducted near the nest. **Mitigation Measure BR-1j: Avoid, Minimize, and Mitigate for Impacts on Nesting Raptors** 1. A qualified biologist shall conduct a survey for nesting raptors if vegetation/tree removal or ground-disturbing activities is to commence within 1,000 feet of suitable raptor nesting habitat between February 1 and September 15. The survey shall cover the limits of construction and accessible suitable nesting habitat up to 1,000 feet from the project boundary. The survey shall occur within 30 days of the date that vegetation/tree removal or ground-disturbing activities will encroach within 1,000 feet of suitable habitat and a final survey no later than 5 days prior to scheduled activity. 2. The biologist shall supply a brief written report (including date, time of survey, survey method, name of surveyor and survey results) to the Environmental Coordinator prior to ground disturbing activity. If no active nests are found	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		during the survey, no further mitigation will be required. 3. If any active nests are found, the Environmental Coordinator and CDFW shall be contacted to determine appropriate avoidance/protective measures, such as buffers and onsite biologist for monitoring. Whichever avoidance and protective measures are chosen, those measures shall be implemented prior to the commencement of ground-disturbing activities. **Mitigation Measure BR-1k: Avoid, Minimize, and Mitigate for Impacts on Migratory Nesting Birds** 1. A qualified biologist shall conduct a survey for nesting migratory birds if vegetation/tree removal or ground-disturbing activities is to commence within 500 feet of suitable nesting habitat between February 1 and August 31. The survey shall cover the limits of mining and accessible suitable nesting habitat up to 500 feet from the project boundary. The survey shall occur no more than 7 days prior to ground-disturbing activities. 2. If trees are to be removed, removal should be during the period of September through January, in order to avoid the nesting season. Any trees that are removed during the nesting season,	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		which is February through August, will be surveyed by a qualified biologist and will only be removed if no nesting migratory birds are found. **3.** If active nest(s) are found in the survey area, a non-disturbance buffer, the size of which shall be determined by a qualified biologist, will be established and maintained around the nest to prevent nest failure. All mining activities will be avoided within this buffer area until a qualified biologist determines that nestlings have fledged **Mitigation Measure BR-1l Avoid, Minimize, and Mitigate for Impacts on Bats** 1. Habitat Assessment. A qualified biologist with education and experience in bat biology and identification, shall conduct a habitat assessment for potentially suitable bat habitat within six months of project activities for each phase of the project. If the habitat assessment reveals suitable bat habitat, then a qualified bat biologist shall do a presence/absence survey during the peak activity periods. If bats are present, then the qualified biologist shall submit a bat avoidance plan to CDFW for review and approval. 2. Bat Avoidance Plan. The bat avoidance plan should identify: 1) the location of the	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		roosting sites; 2) the number of bats present at the time of assessment (count or estimate); 3) species of bats present; 4) the type of roost (e.g. day/night, maternity, hibernaculum, bachelor); and 5) species specific measures to avoid and minimize impacts to bats. The bat avoidance plan shall evaluate the length of time of disturbance, equipment noise, and type of habitat present at the project. 3. No Disturbance Buffer. If during the habitat assessment the qualified bat biologist identifies a bat roost within the Project boundary that is not proposed for demolition or removal, then a no disturbance buffer shall be established around the roost in consultation with CDFW. The width of the buffer should be determined by the qualified bat biologist based on the bat species, specific site conditions, and level of disturbance. The buffer should be maintained until the qualified bat biologist determines that the roost is no longer occupied. 4. Roost Removal Timing. The project that results in the loss or modification of the original roost structure should be implemented outside hibernation and maternity seasons, November 1 through February 1, and April 1 through August 31, respectively.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		5. Bat Exclusion. If an active bat roost is found in a tree or structure that must be removed, the qualified bat biologist should prepare a Bat Exclusion Plan for the passive exclusion of the bats from the roost. Exclusion shall be scheduled either (1) between March 1 and March 31, prior to parturition of pups; or (2) between September 1 and October 31 prior to hibernation (or prior to evening temperatures dropping below 45°F and onset of rainfall greater than ½ inch in 24 hours). The qualified bat biologist shall confirm the absence of bats prior to the start of construction. If replacement structures are considered, they shall be designed to accommodate the bat species they are intended for. Use of replacement structures shall be incorporated into the Bat Exclusion Plan. The Bat Exclusion Plan shall be submitted to CDFW for review and approval a minimum of 10 days prior to the installation of exclusion devices. CDFW does not support eviction of bats during maternity or hibernation periods. 6. Tree Removal. Removal of trees that qualify as suitable bat habitat shall be scheduled either (1) between approximately March 1 and March 31, prior to parturition of pups; or (2) between September 1 and October 31 prior to hibernation (or prior to evening	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		temperatures dropping below 45°F and onset of rainfall greater than ½ inch in 24 hours). Removal of trees containing suitable bat habitat should be conducted under the supervision of a qualified bat biologist. **Mitigation Measure BR-1m Avoid, Minimize, and Mitigate for Impacts on American Badger** 1. A qualified biologist shall conduct focused surveys for American badger dens within two weeks prior to ground-disturbing activities in suitable habitat (i.e., undeveloped grassland, blue oak woodlands, and seasonally inundated wetlands/waters). The survey shall cover the limits of ground disturbance and a 100-foot buffer. Any potentially active American badger dens located during the survey that show signs of recent activity shall be evaluated (typically with remote cameras) to determine activity status. 2. If an active American badger den is detected during the breeding season (typically from March through May), then prior to mining activities, the qualified biologist shall establish a 100-foot no-disturbance buffer (e.g., staking, flagging, or similar measures) around the den. The buffer shall be maintained until the qualified biologist determines that the den is no longer active, and the young are no longer dependent upon the den	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		for survival. If a natal den site cannot be avoided throughout the life of the project (including operations and maintenance), destruction of the natal den burrow shall only proceed after the natal den is no longer active and no badgers are present within the burrow. 3. If construction or mining occurs during the non-breeding period (i.e., typically from June through February) and an active non-natal den is found in or immediately adjacent to the mining footprint, a qualified biologist shall attempt to trap or flush the individual (e.g., passive exclusion with one-way doors) and relocate it to suitable habitat away from construction. After exclusion/relocation is completed, the vacated or unoccupied den can be excavated, and mining can proceed. **Mitigation Measure BR-1n: Avoid, Minimize, and Mitigate for Impacts on Crotch's Bumble Bee** 1. Initial ground-disturbing activities (e.g., grading, staging) shall take place between September 1 and March 31 (i.e., outside of the colony active period), if feasible, to minimize impacts on nesting Crotch's bumble bees. If work occurs during this period, no additional measures are required.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		2. If completing all initial ground-disturbing work between September 1 and March 31 is not feasible, a qualified biologist with 10 or more years of experience conducting biological resource surveys within California, and with field training in bumble bee identification, shall conduct pre-construction surveys for Crotch's bumble bees in the area proposed for impact no more than 14 days prior to the commencement of construction activities. Surveys shall be conducted between April 1 and July 31. The survey (or at least one survey if more than one are carried out) shall occur during that time period but also while at least one of the five most preferred floral genera is abundantly in-flower onsite (i.e., *Asclepias, Salvia, Lupinus, Vicia,* and *Acmispon spp.*). a. The survey shall occur during the period from one hour after sunrise to two hours before sunset, with temperatures between 65 degrees and 90 degrees Fahrenheit, and with sustained wind below 8 miles per hour. Surveying shall be suspended during rain for one hour afterward. If the survey timing makes adherence to those conditions infeasible, survey work shall occur on days within a	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		one-week period that are closest to the temperature and wind ranges stated above. b. The survey duration shall be commensurate with the extent of floral resources (which represent foraging habitat) present within the area proposed for impact and the level of effort shall be based on the metric of a minimum of one person-hour of surveying for active bees per three acres of suitable floral resources/foraging habitat (not including handling or note-taking time). Suitable habitat is defined as flowering patches of at least 5 percent relative cover of any of the five genera noted above, plus *Centaurea, Cirsium,* and *Eschscholzia* spp. In addition, survey efforts shall include the meandering transects that are traversed in finding or walking to known patches of suitable habitat. c. Diagnostic methodology may include either (1) non-lethal capture and chilling, with diagnostic photography of all bee species and counts of their numbers. Methods requiring use	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		of sterilized vials, limitations on handing periods before and during chilling, and site of release shall follow USFWS (2019) as modified by CABBA training and the CABBA Participant Handbook for California species. Capture-based survey requires CDFW scientific collection permit (and memorandum of understanding for listed species); or (2) photographic survey of active bees. The equivalent of a 300-mm lens (DX format) is typically necessary for this purpose. Survey documentation shall include images of all *Bombas* species that are observed and counts of each. d. If Crotch's bumble bees are observed, the biologist shall attempt to locate nests by tracking bee movements, looking for concentrated Crotch's bumble bee activity near the ground surface or objects that have suitable nest cavities, or (under windless conditions) listening for humming that indicates a concentration of individuals.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		e. Survey documentation shall include dates, times, and weather conditions of survey activity, a map of survey tracks, description of any suitable foraging habitat and other floral resources present, a description of observed bumble bee activity, a list and counts of bumble bee species observed, and a map of locations (within 5 meter accuracy or less) of any nests that are found. The report shall be submitted to the County prior to the commencement of construction activities. 3. If Crotch's bumble bees are not detected during the pre-construction survey, or the bumble bees located are definitively identified as not special-status species, no further mitigation or coordination with the County and/or CDFW will be required. 4. If any sign(s) of a Crotch's bumble bee nest or a nest of a species that could not be definitively identified as not being a special-status bumble bee are observed, then construction shall not commence until either, 1) the bumble bees present are positively identified as not special-status by an experienced bumble bee taxonomist, or 2) the completion of	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		coordination with CDFW to identify appropriate mitigation measures, which may include, but not be limited to, waiting until the colony active season ends, establishment of nest buffers, or obtaining an Incidental Take Permit (ITP) from CDFW. 5. If, after coordination with CDFW, impacts to Crotch's bumble bee cannot be avoided, the project applicant shall obtain an ITP from CDFW prior to initiation of ground disturbing activities, and the project applicant shall implement all conditions identified in the ITP. Mitigation required by the ITP may include translocating nesting substrate in accordance with the latest scientific research to another suitable location that supports floral resources similar or superior to the impact area, enhancing floral resources (i.e., site restoration) on areas of the project site that will remain appropriate habitat, and/or other measures specified by the ITP	
Impact BR-2: Would The Project Have A Substantial Adverse Effect On Any Riparian Habitat Or Other Sensitive Natural Community Identified In Local Or Regional Plans, Policies Or Regulations Or By The California Department Of Fish And Wildlife Or U.S. Fish And Wildlife Service	PS	Mitigation Measure BR-3, BR-5a, and BR-5b	SU

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
Impact BR-3: Would The Project Have A Substantial Adverse Effect On State Or Federally Protected Wetlands (Including, But Not Limited To, Marsh, Vernal Pool, Coastal, Etc.) Through Direct Removal, Filling, Hydrological Interruption, Or Other Means	PS	**Mitigation Measure BR-3: Avoid, Minimize, Restore, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters** 1. Implement standard construction BMPs provided in Mitigation Measure BR-1a, in particular: Construction Fencing, Erosion Control, Equipment Storage and Fueling, Dust Control, Soil Compaction, and Revegetation to protect adjacent wetlands and other waters from unauthorized encroachment. a. Jurisdictional aquatic resources shall be included in the WEAP discussed under" Training of Mining and Construction Staff" in Mitigation Measure BR-1a. 2. If the final approved project does not avoid all State and federally-protected wetlands and other waters, the applicant must submit a jurisdictional delineation of waters of the U.S. and/or State to the USACE prior to approval of the work authorization permit, and subsequently obtain all necessary permits for impacts on jurisdictional features. These typically include the following permits: CWA Section 404 Nationwide or Individual Permit, CWA Section 401 Water Quality Certification, Waste Discharge Requirements from the RWQCB, CFGC Section 1600 Lake and Streambed	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		Alteration Agreement. All conditions of any acquired permits shall be implemented. Concurrently, in coordination with the USACE, RWQCB and/or CDFW, as the case may be, an Aquatic Resources Mitigation Plan shall be prepared and implemented that includes measures to avoid and minimize impacts to aquatic resources, and compensation for any unavoidable impacts to jurisdictional resources to achieve no net loss of State and federally protected wetlands and other waters. The Aquatic Resources Mitigation Plan may include requirements such as: a. Directing construction traffic along access roads until they reach active work sites to limit soil compaction and disturbance to the site. b. Restricting unavoidable temporary construction and maintenance activities within wetlands/other waters (e.g., driving vehicles/equipment through jurisdictional aquatic resources) to occur during the dry season or dewatered areas that have been dry for a minimum of 15 days, and implementing soil compaction prevention via use of rubber	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		mats or other similar materials to protect the soil surface from and distribute the weight of equipment/vehicles when driving over wetlands/other waters for the purposes other than vegetation maintenance. c. Restricting the use of heavy equipment within wetlands/other waters within the mining footprint to occur under dry conditions (e.g., during dry season or so as not to form ruts of 6 inches or more) or dewatered areas. d. Delineation of the work site boundaries such that no work occurs outside the defined impact footprint of the mining area. e. Hardpan/ Duripan Protection. To protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to result in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		associated perched aquifer when aggregate extraction is complete. f. Restoring all temporary impacts to wetlands to pre-existing conditions. g. Establishing wetland avoidance buffers to the maximum extent feasible (e.g., typically a minimum of 50 feet although may be reduced to 10 feet in some circumstances) with flagging, staking, or other appropriate barriers. h. Developing final project designs to maintain existing on-site drainage patterns and ensure no reduction or increase in existing surface water flow off-site into adjacent lands. i. For all work conducted in or within 50 feet of aquatic resources, a qualified biologist shall be on-site to monitor construction activities to ensure avoidance and minimization measures are properly implemented to protect sensitive aquatic resources and that no un-authorized impacts occur.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		3. Compensation shall be provided for project-related impacts to State and federally protected wetlands and other waters to achieve no net loss of the acreage, function, and values of jurisdictional resources. Compensatory mitigation requirements shall apply to residual impacts on all wetland and water features, whether preliminarily identified as potentially jurisdictional or not. Compensatory mitigation shall be approved by USACE, RWQCB and/or CDFW, as the case may be, as part of any required permitting processes. Potential compensation options may include one or more of the following: on-site restoration, off-site preservation, or purchasing mitigation credits from an agency-approved wetlands mitigation bank, paying an agency-approved in-lieu fee, and/or developing conservation lands to compensate for permanent loss of resources. Mitigation ratios are expected to be no less than 1:1 and shall be determined during the permitting process 4.	
Impact BR-4: Would The Project Interfere Substantially With The Movement Of Any Native Resident Or Migratory Fish Or Wildlife Species Or With Established Native Resident Or Migratory Wildlife Corridors, Or	PS	Impacts to migratory birds have been discussed under the special status species section above under Impact BR-1. Implementation of mitigation measure BR-1j and BR-1k require pre-construction surveys	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
Impede The Use Of Native Wildlife Nursery Sites		prior to initiating work in areas in the vicinity of potential nesting habitat, during the nesting season.	
Impact BR-5: Would The Project Conflict With Any Local Policies Or Ordinances Protecting Biological Resources, Such As A Tree Preservation Policy Or Ordinance	PS	**Mitigation Measure BR-5a: Avoid, Minimize, and Mitigate for Permanent Impacts to Native Trees** Consistent with Sacramento County Policy CO-140, compensation for the unavoidable loss of native oak tree canopy area as a result of project construction shall be provided by the project applicant to achieve a performance standard of no net loss, defined as a minimum 1:1 preservation to impact ratio of native oak tree canopy area lost, through one or more of the following options. The removal of, and compensation for native oak tree canopy area shall be quantified in a Tree Resource Mitigation Plan, subject to Sacramento County review and approval: 1. Oak Preservation. On-site preservation of native oak tree canopy shall be considered as a first priority for fulfillment of this preservation mitigation requirement. For the purposes of this mitigation measure, “on-site” constitutes being within the project site, or immediately adjacent to the project site such that at least a portion of the boundary of the preservation area directly borders oak woodlands in the project site. On-site native oak tree canopy preservation shall preserve the main, central portions of consolidated and isolated groves constituting the existing canopy on-site, and provide an	SU

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		area on-site that compensates for canopy area lost. On-site preservation areas shall prioritize areas that provide connectivity between existing oak woodlands and forest and/or riparian habitat that may serve as potential wildlife movement corridors. The native oak canopy preservation area must be a single contiguous area on-site, adjacent to existing oak canopy to ensure opportunities for regeneration, and at least equal to the size of canopy area lost or else additional compensation as described below (i.e., off-site preservation, preservation bank credit purchase, or in-lieu fee to a tree preservation fund) shall be required to ensure no net loss. 2. If on-site mitigation cannot feasibly achieve the no net loss performance standard, off-site preservation may be considered in entirety or in combination with on-site preservation. The off-site preservation area shall meet all the following criteria to preserve, enhance, and maintain a natural woodland habitat in perpetuity. a. Be equal or greater in area to the total area that is included within a radius of 30 feet of the root	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		protection zone of all trees to be removed; b. Be adjacent to a protected stream corridor or other preserved natural area; c. Support a significant number of native broadleaf trees; d. Offer good potential for continued regeneration of an integrated woodland community; e. Be located within the boundaries of Sacramento County; and, f. Be within parcels immediately adjacent to and surrounding the project site parcels such that the boundary of the off-site preservation parcel(s) share a boundary, at least in part, with the project site parcel boundaries. If preservation of adjacent parcels is not feasible, then preservation shall be within mapped areas of Savannah and Blue Oak Woodland on the Habitat Component map of the Open Space Vision Diagram included in the Sacramento County General Plan.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		3. A combination of on-site and off-site preservation, as described above. 4. Oak tree canopy area lost shall be calculated as the total collective area of contiguous canopy cover representing the downward projection of the crown or crowns of overlapping adjacent tree canopies (i.e., outer extent of leaves and small twigs) for all native oak trees to be removed according to the County-approved final project designs. Oak tree canopy area shall be calculated using a consistent method for determining canopy area impacts as for identifying a suitable mitigation area. At the time of preparation of this environmental impact report, a total of acres of native oak tree canopy area was estimated to be permanently lost and an equal amount would be required for preservation as described in this mitigation measure. 5. If neither on-site nor off-site preservation is sufficient to achieve the no net loss performance standard, or if the full preservation mitigation requirement cannot feasibly be accomplished with on-site and off-site preservation alone, the project applicant shall fulfill any remaining preservation mitigation requirement through either:	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		a. A preservation bank credit purchase for an equivalent oak canopy area of blue oak woodland; or, b. A sum equivalent to the replacement cost for all unmitigated trees within the grading area shall be paid by the project applicant as an "in-lieu fee" to the County's Tree Preservation Fund or another appropriate tree preservation fund (e.g., Sacramento Valley Conservancy). The total amount to be paid shall be based on the current cost per inch in dbh inch for all trees to be mitigated and shall be approved by Sacramento County. 6. Any on- and/or off-site preservation lands used or acquired to fulfill this compensatory mitigation requirement, shall include legal protections for protection into perpetuity (e.g., conservation easement, restrictive covenant, or other Sacramento County-approved mechanism). In addition, the project applicant shall provide funding for (1) acquisition in fee title or any legal protections of the preservation lands, (2) initial habitat improvements (if needed), (3) long-term habitat maintenance and management of the preservation lands in perpetuity, and (4) preparation of a	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		Preserve Management Plan that describes the preserved oak canopy resources on-site, responsible parties, management goals and objectives, management activities, and reporting requirements. The responsibilities for acquisition and management of the preservation lands may be delegated by written agreement to CDFW or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the County. Funding for on- and/or off-site preservation lands shall be estimated through preparation of a Property Analysis Record (PAR), or PAR-equivalent analysis, which is an itemized cost estimate of the initial and capital period costs and annual, ongoing costs of in-perpetuity land management. 7. Preservation as described in this measure either through on-site or off-site means, a preservation bank credit purchase, in-lieu fee, or a combination thereof representing the full mitigation requirement as identified in this mitigation measure shall be completed within 24 months from the start of project-related tree removal activities; any extension must be approved by Sacramento County. If preservation is not completed prior to the start of tree removal activities, the project applicant	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		shall provide financial assurances to guarantee that an adequate level of funding is available to implement the acquisition, initial improvements (if needed), and long-term maintenance and management of preservation lands and/or to cover any additional mitigation options (e.g., bank credit purchase, in-lieu fees). Financial assurance shall be provided to Sacramento County prior to the issuance of a work authorization permit and can be provided in the form of irrevocable letter of credit, bond, a pledged savings account, or another form of security as approved by the County. The total amount of financial assurances shall be determined by an updated appraisal and PAR or PAR-equivalent analysis as described above **Mitigation Measure BR-5b: Avoid, Minimize, and Mitigate Avoid, Minimize, and Mitigate for Temporary Impacts to Native Trees** With the exception of the trees removed and compensated for through Mitigation Measure BR-5a, above, all native trees on the project site, all portions of adjacent off-site native trees which have driplines that extend onto the project site, and all off-site native trees which may be impacted by implementation activities associated with this project, shall be preserved and protected as follows: 1. A circle with a radius measurement from the trunk of the tree to the tip of its longest limb	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		shall constitute the dripline protection area of the tree. Limbs must not be cut back in order to change the dripline. The area beneath the dripline is a critical portion of the root zone and defines the minimum protected area of the tree. Removing limbs which make up the dripline does not change the protected area. 2. Chain link fencing or a similar protective barrier shall be installed one foot outside the driplines of the native trees prior to initiating project construction, in order to avoid damage to the trees and their root system. 3. No signs, ropes, cables (except cables which may be installed by a certified arborist to provide limb support) or any other items shall be attached to the native trees. 4. No vehicles, construction equipment, mobile home/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the driplines of the native trees. 5. Any soil disturbance (scraping, grading, trenching, and excavation) is to be avoided within the driplines of the native trees. Where this is necessary, an ISA Certified Arborist will provide specifications for this work, including methods for root pruning, backfill specifications and irrigation management guidelines.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		6. All underground utilities and drain or irrigation lines shall be routed outside the driplines of native trees. Trenching within protected tree driplines is not permitted. If utility or irrigation lines must encroach upon the dripline, they should be tunneled or bored under the tree under the supervision of an ISA Certified Arborist. 7. If temporary haul or access roads must pass within the driplines of oak trees, a roadbed of six inches of mulch or gravel shall be created to protect the root zone. The roadbed shall be installed from outside of the dripline and while the soil is in a dry condition, if possible. The roadbed material shall be replenished as necessary to maintain a six-inch depth. 8. Drainage patterns on the site shall not be modified so that water collects or stands within, or is diverted across, the dripline of oak trees. 9. No sprinkler or irrigation system shall be installed in such a manner that it sprays water within the driplines of the oak trees. 10. Tree pruning that may be required for clearance during construction must be performed by an ISA Certified Arborist or Tree Worker and in accordance with the American National Standards Institute (ANSI) A300 pruning standards and the	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		International Society of Arboriculture (ISA) "Tree Pruning Guidelines". 11. Landscaping beneath the oak trees may include non-plant materials such as boulders, decorative rock, wood chips, organic mulch, non-compacted decomposed granite, etc. Landscape materials shall be kept two (2) feet away from the base of the trunk. The only plant species which shall be planted within the driplines of the oak trees are those which are tolerant of the natural semi-arid environs of the trees. Limited drip irrigation approximately twice per summer is recommended for the understory plants. 12. Any fence/wall that will encroach into the dripline protection area of any protected tree shall be constructed using grade beam wall panels and posts or piers set no closer than 10 feet on center. Posts or piers shall be spaced in such a manner as to maximize the separation between the tree trunks and the posts or piers in order to reduce impacts to the trees.	
Impact BR-6: Conflict With The Provisions Of An Adopted Habitat Conservation Plan, Natural Community Conservation Plan, Or Other Approved Local, Regional, Or State Habitat Conservation Plan	LS	No mitigation is required.	LS
GREENHOUSE GAS EMISSIONS			

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
Impact CC-1: Generate GHG Emissions, Either Directly or Indirectly, That May Have A Significant Impact on the Environment	LS	No mitigation is required.	LS
Impact CC-2: Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of GHG	LS	No mitigation is required.	LS
CULTURAL RESOURCES			
Impact CR-1: Cause a Substantial Adverse Change in the Significance of a Historical Resource Pursuant to Section 15064.5.	PS	**Mitigation Measure CR-1: Inadvertent Cultural Resource Discovery** In the event of an inadvertent discovery of cultural resources (historical, archaeological or tribal resources, excluding human remains) during construction, all work must halt within a 200-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained at the Applicant's expense to evaluate the significance of the find. If it is determined due to the types of deposits discovered that a Native American monitor is required, the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites as established by the Native American Heritage Commission shall be followed, and the monitor shall be retained at the Applicant's expense. a. Work cannot continue within the 200-foot radius of the discovery site until the archaeologist and/or tribal monitor conducts	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially eligible for listing on the National Register of Historic Places or California Register of Historical Resources. b. If a potentially eligible resource is encountered, then the archaeologist and/or tribal monitor, Planning and Environmental Review Division staff, and project proponent shall arrange for either 1) total avoidance of the resource, if feasible; or 2) test excavations or total data recovery as mitigation. The determination shall be formally documented in writing and submitted to the County Environmental Coordinator as verification that the provisions of CEQA for managing unanticipated discoveries have been met.	
Impact CR-2: Cause a Substantial Adverse Change in the Significance of an Archaeological Resource Pursuant to Section 15064.5	PS	**Mitigation Measure CR-2a: Pre-Construction Worker's Environmental Awareness Program (WEAP) Training** The applicant shall ensure that a Worker's Environmental Awareness (WEAP) -level training is delivered to train equipment operators about cultural resources. The program shall be designed to inform construction personnel about: federal and state regulations pertaining to cultural resources and tribal cultural resources; the subsurface indicators of resources that shall require a work stoppage; procedures for notifying the lead agency of any occurrences; project-specific requirements including	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		fencing and avoidance; and enforcement of penalties and repercussions for non-compliance with the program. The training shall be prepared by a qualified professional archaeologist and may be provided either through a brochure, video, or in-person tailgate meeting, as determined appropriate by the archaeologist. The training shall be provided to all construction supervisors, forepersons, and operators of ground-disturbing equipment. All personnel shall be required to sign a training roster. The construction manager is responsible for ensuring that all required personnel receive the training. The construction manager shall provide a copy of the signed training roster to the lead agency as proof of compliance. **Mitigation Measure CR-2b: Temporary Exclusionary Fencing** To avoid damage to sensitive cultural resources within the project area, an exclusion zone marked by temporary construction fencing shall be erected adjacent to P-34-5194 (Rebel Hill Ditch) and around GA-02 (Ney School). Refer to the Ney School Avoidance and Minimization Plan provided in the ECORP Cultural Resources Inventory Report (ECORP 2024, Section 7.3.3; Figure 24). The archaeologist conducting the Contractor Awareness Training shall identify the exclusion zone to construction personnel during the training. **Mitigation Measure CR-2c: Archeological Monitoring**	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		Prior to the start of construction, the applicant shall retain a qualified professional archaeologist to monitor the installation and removal of the conveyor system at GA-02 (the Ney School Site). Monitors shall also be present during any vegetation removal or initial ground-disturbing activities within 50 feet of GA-02 (Ney School). Monitoring is not necessary for normal maintenance activities, such as removing debris under the conveyor.	
Impact CR-3: Disturb Any Human Remains, Including Those Interred Outside of Dedicated Cemeteries	PS	**Mitigation Measure CR-3: Inadvertent Discovery of Human Remains** Pursuant to Sections 5097.97 and 5097.98 of the State Public Resources Code, and Section 7050.5 of the State Health and Safety Code, if a human bone or bone of unknown origin is found during construction, all work is to stop within 100 feet of the discovery, and the County Coroner and Planning and Environmental Review Division (PER) shall be immediately notified. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission within 24 hours, and the Native American Heritage Commission shall identify the person or persons it believes to be the most likely descendent from the deceased Native American. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposition of, with appropriate dignity, the human remains and any associated grave goods. Additional mitigations are to be followed should the remains be identified as	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		Native American (See Chapter 11: Tribal Cultural Resources, MM TCR-1).	
GEOLOGY AND SOILS			
Impact GEO-1: Would the Project Result in Substantial Soil Erosion or the Loss of Topsoil	LS	No mitigation is required.	LS
Impact GEO-2: Would the Project Be Located in a Geological Unit or Soil that is Unstable, or That Would Become Unstable as a Result of the Project, and Potentially Result in On- or Off-Site Landslide, Lateral Spreading, Subsidence, Liquefaction or Collapse	LS	No mitigation is required.	LS
HAZARDOUS MATERIALS			
Impact HAZ-1: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code 65962.5 and, as a result, would it create a significant hazard to the public or the environment	PS	**Mitigation Measure HAZ-1: Worker Health and Safety Plan** The project proponent shall prepare a Health and Safety Plan (HSP) to protect worker health and safety. This plan shall remain on file at the project site. The HSP shall include, at minimum, the following components: • Minimum training requirements for on-site workers (such as 40-hour HAZWOPER trained);	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		• Inform all workers of all chemicals known to be present at the site and the various routes of human health risks (such as groundwater, soil vapors, and soil contamination); • Criteria for upgrades in personal protective equipment (PPE); • Emergency information such as directions to the nearest hospital and emergency telephone numbers; and • Specific administrative requirements such as documentation of training, health and safety meetings and reporting. • Coordination with Aerojet Rocketdyne to ensure application of and consistency with any standards required by Aerojet Rocketdyne, including notification to Aerojet Rocketydyne as may be required under that company's protocols. **Mitigation Measure HAZ-2: Soil Sampling and Air Monitoring** Prior to any subsurface soil disturbance associated with construction of the conveyor or grading for new access routes/roads within the Aerojet Superfund site, project proponent shall collect soil samples in the vicinity of the proposed work area and the samples shall be analyzed in conformance with the PCD and DTSC approved soil analysis procedures (such as a Soil Analysis Plan (SAP)).	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		Results shall be provided to the County and Aerojet's Partial Consent Decree (PCD) Coordinator. If samples are determined to be at or below established levels for protection of human health, then, based upon information prepared by and provided by the operator, the PCD Coordinator, in conjunction with the operator, or the operator shall: a. Document (operator) and then review the documented results (PCD Coordinator); b. Send correspondence prepared by the operator to the Lead Agencies (US EPA, DTSC and RWQCB) and Project Proponent with a summary of the results and indicate that activities may proceed. c. Continuous air monitoring for VOCs with appropriate equipment (e.g., photo ionization detector or similar instrument) by the operator shall occur at all times workers are disturbing soils at the surface or subsurface. If samples are determined to be above established levels for protection of human health, ground disturbing activities shall not commence and the area shall be delineated as a "constrained area". The PCD Coordinator, in conjunction with the operator, shall: a. Document (operator) then review the documented results (PCD Coordinator); b. Notify the Lead Agencies (US EPA, DTSC and RWQCB) (PCD Coordinator) based upon information prepared by the operator;	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		c. Determine if remedial measures are appropriate or feasible and implement consistent with the PCD (operator, in consultation with the PCD Coordinator); d. Conduct follow up sampling for evaluation and testing (operator). e. The area is to remain a constrained area and ground disturbing activities shall not commence until the area is below established levels for the protection of human health (operator). **Mitigation Measure HAZ-3: Precautionary Measures – Soil Management** During construction of the conveyor and the temporary interior access roads/routes, any soil excavated and not placed back into the ground, will be required to be isolated, profiled and disposed of off-site. The project proponent shall prepare a Soil Management Plan. The Soil Management Plan should be reviewed by Aerojet's PCD Coordinator to ensure there is no conflict with the PCD. A copy of the Soil Management Plan must be kept onsite at all times. 1. Isolation - Excavated soils will be stored within roll off containers or placed upon visqueen sheets and covered to prevent erosion. 2. Profile - Soils will be profiled, using established laboratory analytical methods, for the chemicals identified in the most recent OU Sampling and Analysis Plan (SAP)	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		corresponding to the location of excavated soils. 3. Disposal - Any soils requiring off-site disposal shall be transported off-site in accordance with transportation laws and local, state and federal regulations. The soil shall be disposed of at a CERCLA approved landfill. **Mitigation Measure HAZ-4: Emergency Response Plan** The project proponent shall establish an Emergency Response Plan (ERP) prior to issuance of a Work Authorization Plan. The ERP shall always be onsite and accessible to everyone on site. The ERP shall at minimum: • Establish notification requirements for fire, hazardous material release, and uncovering unexpected hazardous substance during mining. o All contact names and numbers shall be reviewed and updated annually • Establish notification requirements for evacuation of nearby residents in the event of an emergency. • Emergency evacuation routes shall be updated at least annually. If there are temporary road closures due to repairs or construction, the routes shall be updated to reflect the temporary closures.	

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		Mitigation Measure HAZ-5: Contamination Buffers Prior to commencement of each Phase of mining, the project proponent shall coordinate with Aerojet, and based on the most up-to-date investigations, applicant shall install temporary fencing to demarcate the mining exclusion areas (also referred as “areas of constraints”). Constrained areas shall be defined as areas where mining is prohibited due to contamination concentrations exceeding defined cleanup levels. The fencing shall be placed to provide a buffer of no less than 100 feet to ensure worker safety.	
Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	PS	Mitigation Measures HAZ-2, HAZ-3 and HAZ-4	LS
Impact HAZ-3: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	PS	Mitigation Measures HAZ-1, HAZ-3 and HAZ-5	LS
Impact HAZ-4: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	PS	Mitigation Measures HAZ-3, HAZ-4 and HAZ-5	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
HYDROLOGY AND WATER QUALITY			
Impact HY-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality	LS	No mitigation is required.	LS
Impact HY-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin	LS	No mitigation is required.	LS
IMPACT HY-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in: • *Substantially Increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site;* • *Create or Contribute runoff water which would exceed the capacity of existing or planned stormwater*	LS	No mitigation is required.	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
systems or provide substantial additional sources of polluted runoff:			
LAND USE			
Impact LU-1: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation of an agency adopted for the purpose of avoiding or mitigating and environmental effect.	PS	Topical analyses in this EIR have identified mitigation measures that would reduce potential impacts to less than significant.	LS
NOISE			
Impact NO-1 Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general noise ordinance, or applicable standards of other agencies?	PS	**Mitigation Measure NO-1: 50-Foot Extraction Setback** All extraction activities shall maintain a 50-foot setback distance from the mine site property line boundaries. **Mitigation Measure NO-2: Extraction Activities Near Sensitive Land Uses** If certificates of occupancy have been issued for residential or similar sensitive land uses in the Easton Specific Plan area, then prior to conducting excavation activities within 280 feet of those uses during daytime hours (or within 500 feet for excavation activities during nighttime hours), then a focused noise-control plan shall be implemented to ensure satisfaction with the applicable noise standards of Sacramento County. The noise-control plan should take into consideration the relative distances and elevations of the residences and	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		excavation areas, the number and types of equipment proposed for excavation activities, and the hours in which those activities would occur. The noise control plan shall demonstrate how the applicable noise standards shown in Table 11 will be achieved through incorporation of setbacks, berms / barriers, modifications to equipment and/or operations, etc.	
Impact NO-2: Would the project result in the generation of excessive groundborne vibration or groundborne noise levels?	PS	**Mitigation Measure NO-3: 60-Foot Bulldozer Setback** Extraction activities requiring bulldozers shall not occur within 60 feet of an existing residence. The setback must be maintained to comply with the vibration threshold of annoyance if the residential homes have been constructed and occupied.	LS
TRIBAL CULTURAL RESOURCES			
Impact TCR-1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource	PS	**Mitigation Measure TCR-1: Tribal Cultural Resources Unanticipated Discoveries** In any suspected TCRs are discovered during ground disturbing construction activities, all work shall cease within 100 feet of the find, or an agreed upon distance based on the project area and nature of the find. A Tribal Representative from a California Native American tribe that is traditionally and culturally affiliated with a geographic area shall be immediately notified and shall determine if the find is a TCR (PRC	LS

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
		Section 21074). The Tribal Representative will make recommendations for further evaluation and treatment as necessary. When avoidance is infeasible, preservation in place is the preferred option for mitigation of TCRs under CEQA and United Auburn Indian Community (UAIC) protocols, and every effort shall be made to preserve the resources in place, including through project redesign, if feasible. Culturally appropriate treatment may be, but is not limited to, processing materials for reburial, minimizing handling of cultural objects, leaving objects in place within the landscape, or returning objects to a location within the project area where they will not be subjected to future impacts. Permanent curation of TCRs will not take place unless approved in writing UAIC or by the California Native American Tribe that is traditionally and culturally affiliated with the project area. The contractor shall implement any measures deemed by the CEQA lead agency to be necessary and feasible to preserve in place, avoid, or minimize impacts to the resource, including, but not limited to, facilitating the appropriate tribal treatment of the find, as necessary. Treatment that preserves or restores the cultural character and integrity of a TCR may include Tribal Monitoring, culturally appropriate recovery of cultural objects, and reburial of cultural objects or cultural soil. Work at the discovery location cannot resume until all necessary investigation and evaluation of the discovery under the requirements of CEQA, including AB-52, have been satisfied.	
CUMULATIVE			

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
Aesthetics	PS	Mitigation Measure AE-1	LS
Air Quality	PS	Mitigation Measures AQ-1, AQ-2, AQ-3	SU
Biological Resources	PS	Mitigation Measures BR-1a, BR-1b, BR-1c, BR-1d, BR-1e, BR-1f, BR-1g, BR-1h, BR-1i, BR-1j, BR-1k, BR-1l, and BR-1m, BR-1n, BR-3, and BR-5	SU
Greenhouse Gas Emissions	LS	No mitigation is required.	LS
Cultural Resources	PS	Mitigation Measures CR-1, CR-2a, CR-2b, CR-2c and CR-3	LS
Geology, Soils, and Mineral Resources	LS	No mitigation is required.	LS
Hazards and Hazardous Materials	PS	Mitigation Measures HAZ-1, HAZ-2, HAZ-3, and HAZ-4	LS
Hydrology, Drainage, and Water Quality	LS	No mitigation is required.	LS
Noise	PS	Mitigation Measures NO-1, NO-2, and NO-3.	LS
Tribal Cultural Resources	PS	Mitigation Measure TCR-1	LS

1 INTRODUCTION

SUMMARY OF THE PROPOSED PROJECT

The White Rock North Mine project (project) would allow the extraction of mine tailing aggregate on 2,136 acres of the Aerojet property in unincorporated Sacramento County. The project would allow extraction of up to 25 million tons of material over roughly 20 years, with a yearly limit of 3 million tons. Mined material would be transported by an off-site conveyor to the existing and separately permitted Grantline processing plant. A new conveyor undercrossing would be constructed at White Rock Road. The proposed mining use is allowed under the Aerojet Special Planning Area (SPA), but requires approval of both a SPA Implementation Permit and a Reclamation Plan.

ENVIRONMENTAL IMPACT REPORT SCOPE AND PROCESS

PURPOSE OF THIS ENVIRONMENTAL IMPACT REPORT

This environmental impact report (EIR) evaluates the potential environmental impacts associated with implementation of the project. This EIR has been prepared under the direction of Sacramento County in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations [CCR] Title 14. Natural Resources Division 6 Section 15000 et seq.). An EIR discloses known or possible impacts on the environment that may result from a project, alternatives to the project, and measures to mitigate those impacts to decision makers (e.g., the Sacramento County Board of Supervisors), public agencies, and the general public. The intent of the EIR is to provide objective information to allow the Sacramento County Board of Supervisors to make an informed decision when considering whether to approve or deny the project. The EIR does not comment on the merits of the project and does not make a recommendation for or against its approval.

LEAD, RESPONSIBLE, AND TRUSTEE AGENCIES

Sacramento County is the Lead Agency under CEQA for this EIR because it has discretionary authority to determine whether or how to approve the project. Responsible Agencies are other agencies that are responsible for carrying out or implementing a specific component of the project or for approving a project that implements the goals and policies of the plan. Trustee agencies have jurisdiction over certain resources held in trust for the people of California, but do not have legal authority over approving or carrying out the project. Based on the potential effects known at this time, responsible agencies may include: US Army Corps of Engineers, US Fish and Wildlife Service, the California Department of Fish and Wildlife, the Central Valley Regional Water Quality Control Board, Sacramento Municipal Utility District, Sacramento Metropolitan Air Quality Management District.

Scope of This Environmental Impact Report

Pursuant to CEQA and the State CEQA Guidelines, a lead agency shall focus the EIR's discussion on significant environmental effects and may limit discussion on other effects to brief explanations about why they are not significant (PRC Section 21002.1; State CEQA Guidelines Section 15128). Potentially significant impacts were identified based on review of comments received as part of the public scoping process (see Appendix A) and additional research and analysis of the relevant project data during preparation of this EIR.

The County has determined that the project has the potential to result in significant environmental impacts on the following resources, which are addressed in detail in this EIR:

- aesthetics;
- air quality;
- biological resources;
- greenhouse gas emissions;
- cultural resources;
- geology and soils;
- hazardous materials;
- hydrology and water quality;
- land use;
- noise;
- tribal cultural resources.

This Draft EIR also addresses other CEQA-mandated issues (e.g., alternatives, and cumulative impacts).

Public and Environmental Review Process

Notice of Preparation

A Notice of Preparation (NOP) for the Project was first published on November 9, 2022. The Project Applicants and County of Sacramento staff subsequently reviewed the results of several CEQA-related studies, consulted interested and affected parties, and had extensive conversations concerning how the original project might adversely affect the environment. As that information became available, the Project Applicants, in coordination with County staff, modified the original project to lessen its potential to result in environmental impacts. Specifically, the California Department of Toxic Substances Control in coordination with the State Regional Water Quality Control Board, noted that the proposed site plan covers areas of the Aerojet campus that have not been investigated or remediation plans prepared. In response to this letter, the

applicant has revised the site plan and therefore the project mining footprint presented in this EIR is slightly smaller than what was presented in the NOP.

The NOP and copies of the comments received in response to the NOP are provided in Appendix PD-3. All NOP comments were considered by the EIR preparers. The introduction of each environmental resource area chapter (Chapters 3 through 16) identifies NOP comment topics addressed in the respective chapter.

Draft Environmental Impact Report

This Draft EIR is being circulated for public review and comment for a period of 45 days. During this period, comments from agencies, as well as organizations and the general public, on environmental issues may be submitted to the County.

During the public review period, the Draft EIR is available for review between 8:30 a.m. and 4:30 p.m. Monday through Friday at the County Planning and Environmental Review Division located at:

Department of Community Development
Planning and Environmental Review Division
827 7th Street, Room 225
Sacramento, CA 95814

The Draft EIR is also available online at:

https://planningdocuments.saccounty.net/projectdetails.aspx?projectID=7866&communityID=2

All agencies, organizations, and interested parties, have the opportunity to comment on the Draft EIR during the public review period.

Written comments on this Draft EIR should be addressed to:

> Julie Newton, Environmental Coordinator
> Sacramento County
> Department of Community Development
> Planning and Environmental Review Division
> 827 7th Street, Room 225
> Sacramento, CA 95814

Written comments may also be submitted to CEQA@saccounty.gov

Following the close of the public comment period, the County will prepare a Final EIR, which will include written responses to comments on the Draft EIR and will identify any changes to the EIR that may be required to address comments or new information, if applicable. Once the Final EIR is completed, the Board of Supervisors must certify the EIR and adopt Findings of Fact before it can approve the project. If the EIR finds that

the project would result in any significant and unavoidable impacts, then the Board of Supervisors must also adopt a Statement of Overriding Considerations.

INTENDED USES OF THIS EIR

The Sacramento County Board of Supervisors will use the information contained in this EIR to evaluate the project and render a decision to approve or deny the requested entitlements (as described further in Chapter 2, “Project Description”).

The following responsible agencies may also use this EIR for planning or permitting purposes:

- Sacramento Municipal Utility District (SMUD)
- County of Sacramento Site Improvement Section
- County of Sacramento Building Permits Inspection Division
- County of Sacramento Department of Transportation
- Sacramento County Environmental Management Department
- Sacramento Metropolitan Air Quality Management District
- Regional Water Quality Control Board – Central Valley Region
- California Department of Fish and Wildlife
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service.

2 PROJECT DESCRIPTION

INTRODUCTION

The White Rock North Mine project (project) proposes a 20-year mining operation to extract aggregate materials from old dredger mine tailings and reclaim the area to allow for future uses. The mining operation would also include the construction of an off-site conveyor to transport aggregate material to the nearby Teichert Grantline Plant. The proposed project is located on a 2,136-acre portion of the Aerojet Rocketdyne, Inc. (Aerojet) property in Sacramento County (Plate PD-1 Plate PD-2).

ENTITLEMENTS:

The project will require the following entitlements subject to approval by the Sacramento County Board of Supervisors as well as additional approvals from local, state and federal agencies as described in Table PD-2 at the end of this chapter.

- A **SPA Implementation Permit** to allow surface mining and reclamation on 2,136± acres for a period of 20 years, with an additional 3 years to complete reclamation. The Applicant requests the ability to mine and transport up to 3 million tons per year, with an average anticipated production of 1.25 million tons per year. Pursuant to Section 1A of the SPA Implementation Agreement, the SPA Implementation Permit will incorporate the mining plan, serve as the vehicle for imposing conditions, be subject to CEQA review, and be reviewed by the Planning Commission and Board of Supervisors.

- A **Reclamation Plan** to include the end use of the mining area as undeveloped land and the end use of the conveyor area as native grassland.

- A **Work Authorization Permit** prior to commencement of any surface mining activities.

- A **Use Permit** for a 1± acre off-site conveyor connection and undercrossing at White Rock Road to transport mined materials to the existing, separately permitted off-site Teichert Grantline processing plant. Any permitting for the portion of the conveyor connection south of White Rock Road would be separately addressed by Teichert, if needed.

- A **Development Agreement** between the Applicant and the County of Sacramento.

- An **Encroachment Permit** and **Improvement Plans** as needed to allow installation of a conveyor undercrossing and driveway improvements along White Rock Road.

The project would mine and transport up to 3 million tons per year, with an average anticipated production of 1.25 million tons per year. The Applicant is requesting a 20-year permit with an additional 3 years to complete reclamation. The reclamation plan would return the land to an undeveloped condition, which is readily adaptable to future uses allowed under the Aerojet Special Planning Area (SPA).

Mined material would be transported from the project site to the Teichert Grantline Plant located on Grantline Rd. The total length of the proposed off-site conveyor is approximately 0.9 miles; 0.35 miles north of White Rock Road and 0.55 miles south of White Rock Road. The off-site conveyor would exit the project site approximately one mile east of the intersection of Nimbus Road and White Rock Road. The conveyor traverses south, under White Rock Road, eventually connecting with the existing conveyor system in place on parcel 072-0370-069. (Plate PD-3).

The construction of the off-site conveyor would include an undercrossing at White Rock Road to transport mined materials from the White Rock Road undercrossing to connect to the existing conveyor line on the Grant Line Clark (Clark) mine site. The conveyor connection would be subject to the requirements of the existing Clark site Use Permit (1987-1727) and the County's substantial compliance determination (PLNR2023-00136) with respect to the conveyor extension, as discussed later in this chapter.

PROJECT OBJECTIVES

Per Section 15124(b) of the CEQA Guidelines, the project description shall include:

> A statement of the objectives sought by the proposed project. A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project and may discuss the project benefits.

The project applicant has provided the following statement of basic project objectives consistent with CEQA Guidelines Section 15124 (b):

1. To maximize the on-site extraction of available dredge tailing sand and gravel reserves at a rate of up to 3 million tons per year, pursuant to permitted surface mining rights under the Aerojet SPA.

2. To allow mining and reclamation in a manner that will efficiently provide a 20 year supply of saleable sand and gravel reserves in mining blocks within close proximity to each other in order to justify the capital investment in the project.

3. To continue to supply an economic and reliable source of construction materials to the Sacramento County market, including Portland Cement Concrete grade aggregate and asphaltic concrete, for a period of 20 years.

4. To allow for the transportation of mined materials by conveyor to leverage existing, separately permitted, off-site aggregate processing and conveyor infrastructure.

5. To mine property that largely consists of dredge tailing piles and return the property to a state that is readily adaptable and more suitable for future development within the Aerojet SPA via reclamation, which include grading of the dredge tailing piles to relatively flat pads.

6. To implement the proposed reclamation plan to establish end uses of undeveloped land and native grassland, which are readily adaptable to future uses allowed under the Aerojet SPA, in accordance with the Surface Mining and Reclamation Act (Pubic Resources Code (PRC) Section 2710, et seq.).

Project Location

The project is located within the Aerojet SPA within the Cordova community of unincorporated Sacramento County. The project site is generally bounded by Folsom Boulevard/U.S. Highway 50 to the north, White Rock Road to the south, Prairie City Road to the East and Nimbus Road to the west. The geographical center of the project site is located approximately at latitude 38.6184 and longitude -121.176. Reference Plate PD-1 through Plate PD-2 for project location exhibits.

The entrance to the project site is proposed near the intersection of Nimbus Road and White Rock Road. Currently access to the site is restricted and all visitors must enter through the main entry gate (Gate 1A), on Nimbus Road south of Alabama Road.

Table PD-1 details the assessor parcel numbers (APN), ownership, zoning and General Plan designations for the involved properties.

Table PD-1: Assessor Parcels, Ownership, Zoning and General Plan Designations

APN	Parcel Acreage (approx.)	Owner	Zoning	General Plan
Mining Areas				
072-0231-0141	2,646.8	Aerojet	Aerojet SPA	Extensive Industrial
072-0231-0145	2,146.7	Aerojet	Aerojet SPA	Extensive Industrial
Off-Site Conveyor Connection (No Mining)				
072-0100-020	241.4	Aerojet	M1	Extensive Industrial
072-0231-131	1.1	Aerojet	Aerojet SPA	Extensive Industrial
072-0370-069	199.9	Grant Line Road Properties, LLC	IR (SM)	General Agricultural
Total:	5,235.9			

Plate PD-1: Project Location Map

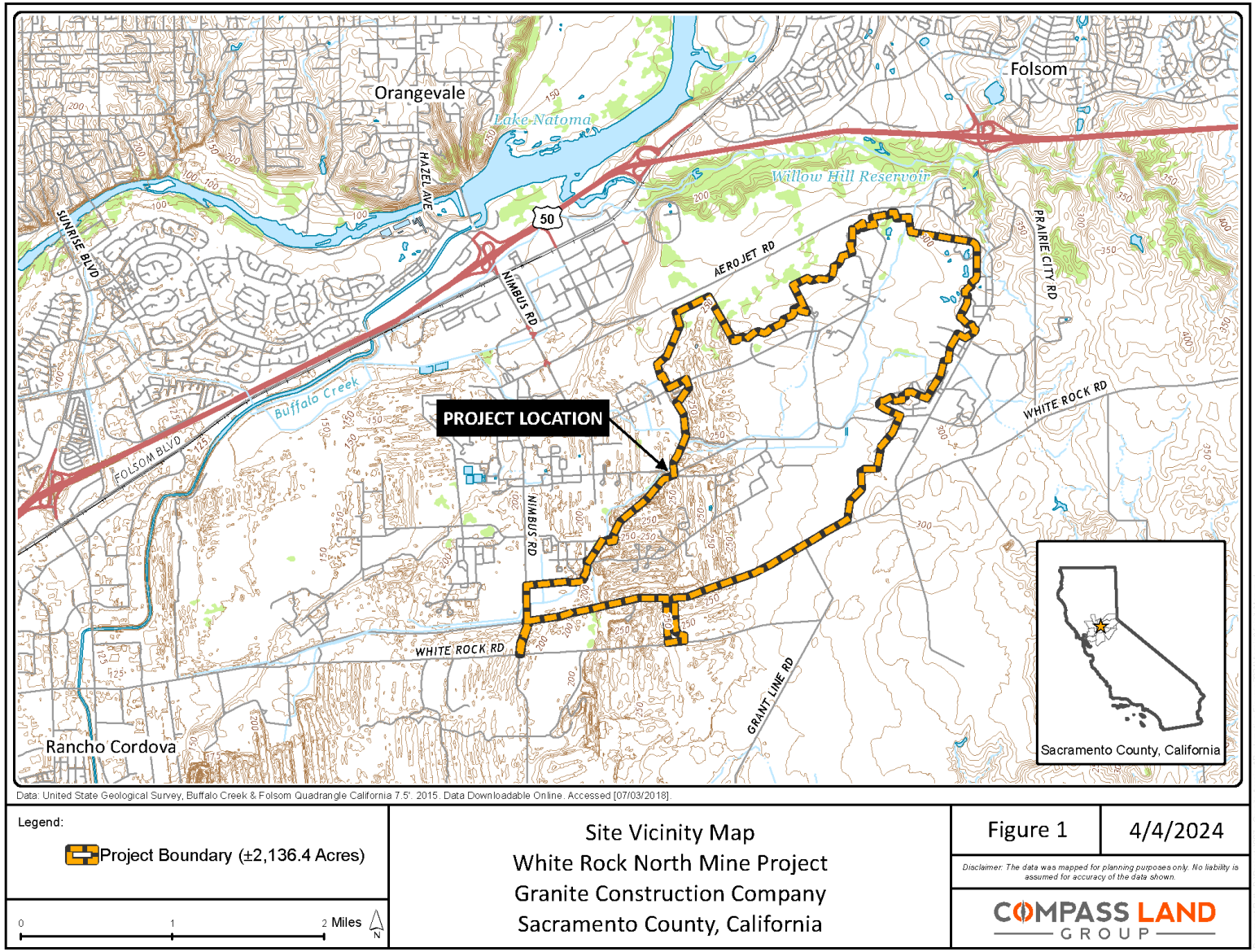


Plate PD-2: Aerial Photo of Project Site

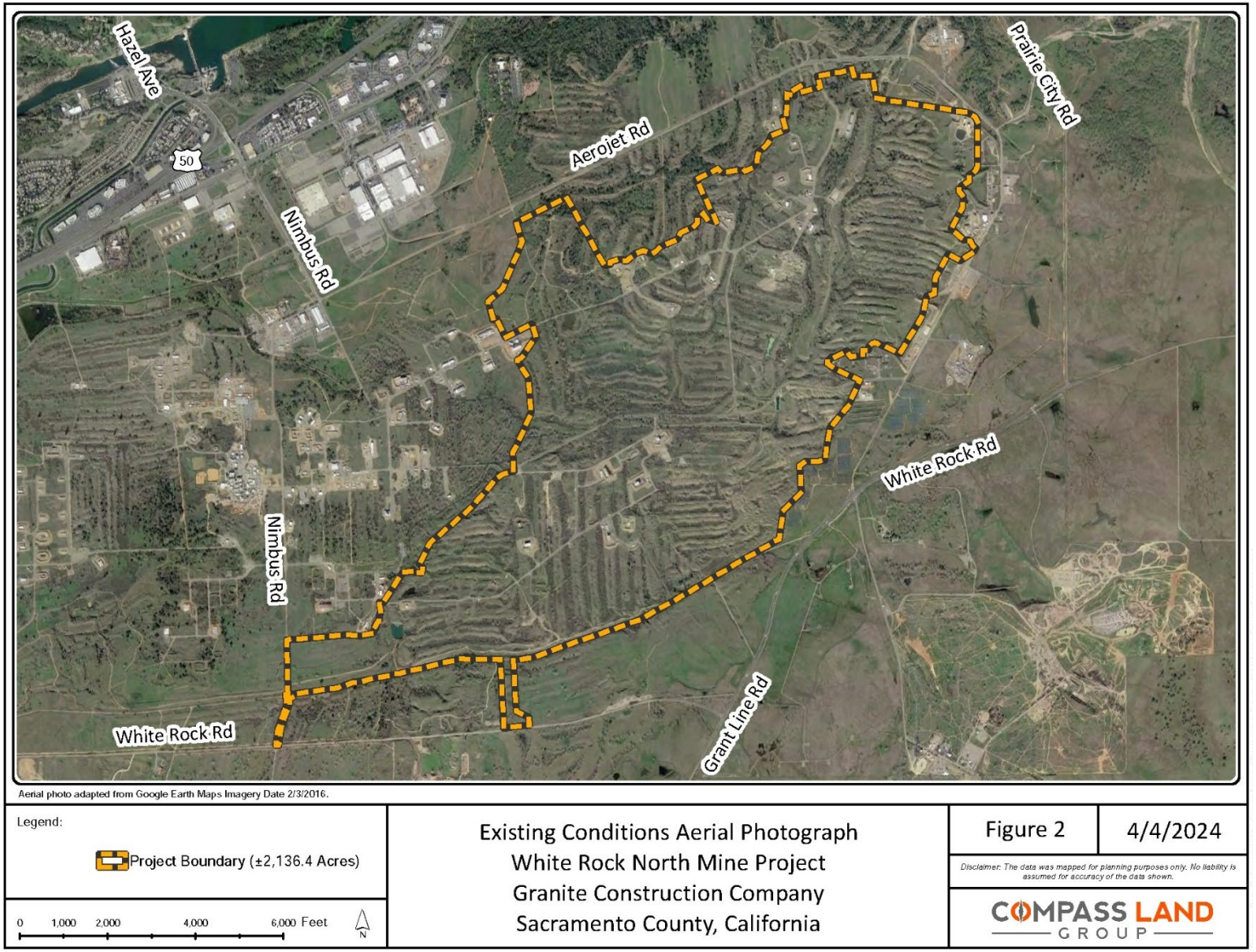
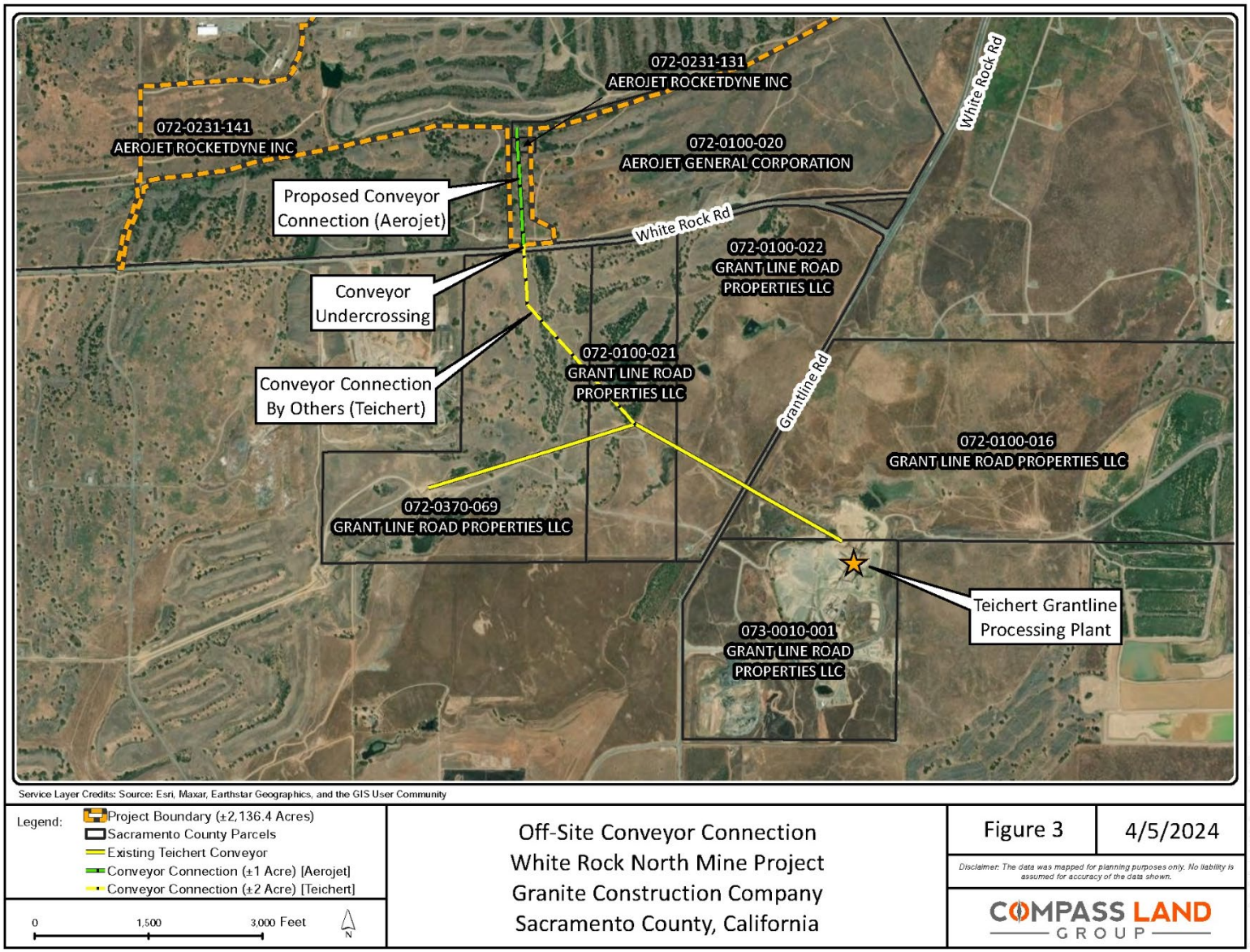


Plate PD-3: Proposed Conveyor Alignment



Environmental Setting

The project boundary is within the Aerojet campus, south of the American River and U.S. Highway 50. Historically, the project site was mined for gold by dredge mining. Gold dredge mining generally consisted of extracting gold from sand, gravel, and dirt using water and mechanical methods and resulted in dredge tailings. At the project site, the tailings from the dredge mining operation created a complex landscape of linear cobble piles up to approximately 40 feet tall interspersed with ravines and basins.

The topography of the site is largely characterized by the tailing rows, ranging from 216 feet to 260 feet above sea level. The slopes and tops of the tailing rows are generally covered in non-native grasses and between the tailing rows are ravines and basins with numerous native oak trees, as well as other native and non-native trees. Buffalo Creek and tributaries traverse the project site.

Aerojet Special Planning Area (SPA)

The project also lies within the boundaries of the Aerojet SPA (Sacramento County Ordinance No. SZC 95-0014, Zoning Code Section 508-300 *et. seq.*), which encompasses approximately 12,000 acres of land owned or previously owned by Aerojet. The intent of the Aerojet SPA is to regulate land use and development of all of the real property covered under the SPA. The Aerojet SPA allows certain types of development activities within the SPA as a matter of right, including “existing uses” as specifically defined (SPA Section 508-304(a)). The proposed surface mining uses are permitted under the SPA and the Aerojet Special Planning Area Implementation Agreement Regarding Surfacing Mining (adopted by Resolution No. 2006-1180 dated August 29, 2006, Appendix PD-1), subject to performance standards that include approval of an SPA Implementation Permit and Reclamation Plan. A Mining Plan must meet the provisions of the Sacramento County Zoning Code, as outlined in Section 4.8.11.A – L.

The Aerojet SPA property has been the subject of surface mining operations and contains aggregate resources the removal of which will facilitate the property’s future use. The County recognizes the importance of the aggregate present on the Aerojet SPA property for meeting the County’s present and future construction material needs and sustaining economic development within the County (See SPA Implementation Agreement, Recital F). On August 29, 2006, the County Board of Supervisors determined that surface mining qualifies as a permitted “existing use” under the Aerojet SPA. Thus, the County may condition and regulate surface mining on the Aerojet SPA property, but, as a permitted use may not deny the right to engage in such activity.

The County and Aerojet did still intend that surface mining uses would achieve the specified performance and development standards of the Aerojet SPA, and otherwise applicable County standards for reclamation, permitting, mitigation and environmental review. (SPA Implementation Agreement, Recital G and Section 1A). Accordingly, the project will be evaluated for consistency with the applicable performance standards

associated with surface mining uses under the Aerojet SPA, as specified in the SPA Implementation Agreement. The vehicle for approval of the surface mining uses is the SPA Implementation Permit, which will incorporate the submitted mining plan, serve as the vehicle for imposing conditions, be included within this EIR/CEQA review, and be reviewed by the Planning Commission and the Board of Supervisors. The Board of Supervisors may impose conditions on the SPA Implementation Permit in order to regulate the surface mining activity and mitigate its impacts.

EPA Superfund Designation

Aerojet and its subsidiaries have operated at the approximately 8,500-acre Sacramento County campus, which includes the project site, since 1953. Historic operations within the Aerojet campus included: manufacturing liquid and solid propellants for rocket engines for military and commercial use; designed and tested jet-propulsion (rocket) engines, chemical manufacturing and pharmaceuticals. Currently, many of these historical operations have closed or are in the process of closing.

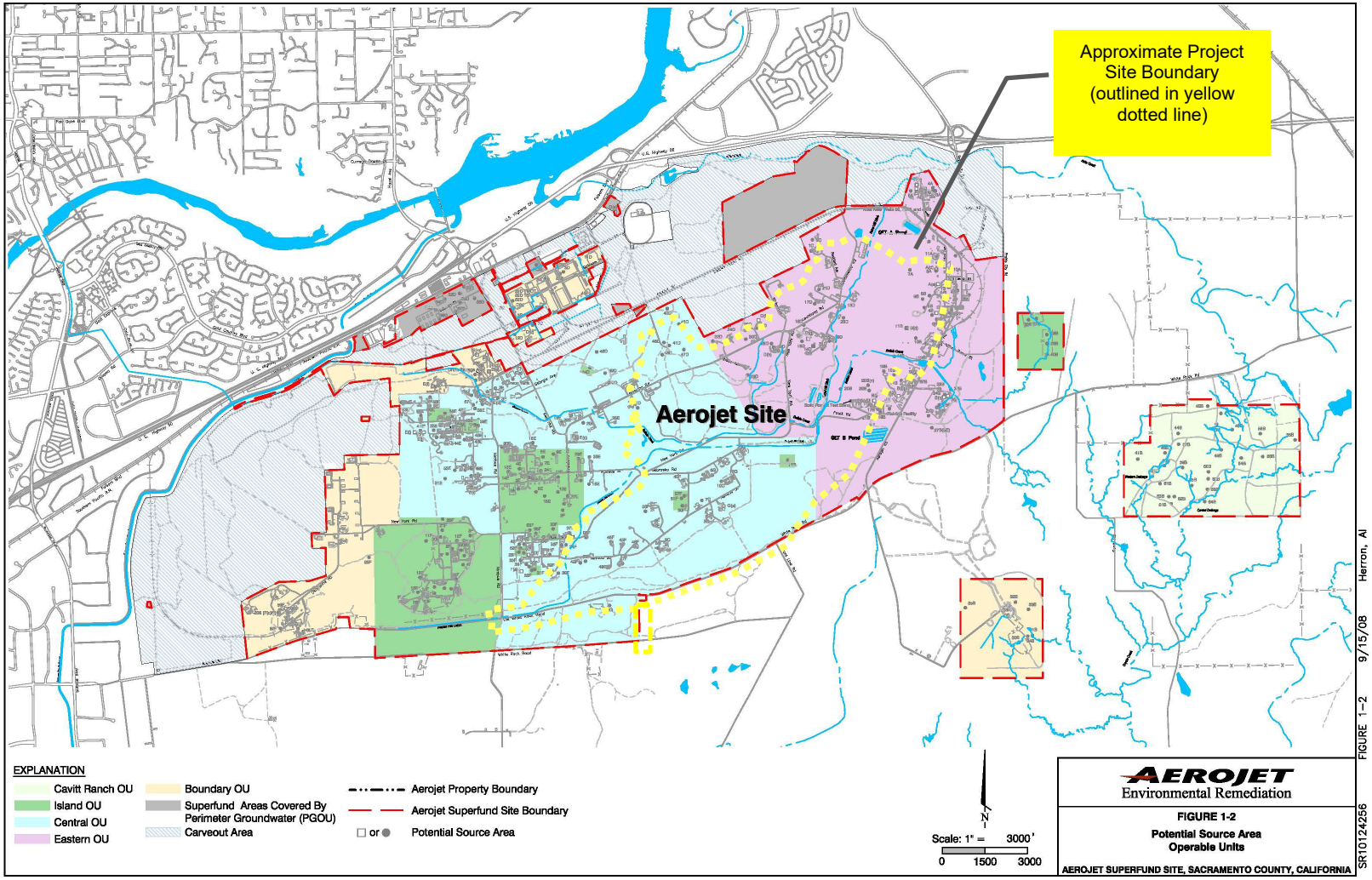
Over the course of sixty years, Aerojet and its subsidiaries disposed of unknown quantities of hazardous waste chemicals, including trichloroethene (TCE), perchlorate, N-nitrosodimethylamine (NDMA), and other chemicals associated with rocket propellants, on the property. Disposal of wastes occurred in surface impoundments, landfills, deep injection wells, leachate fields and open burning. As a result, the U.S. Environmental Protection Agency (EPA) reports that a 27-square mile swath of groundwater underneath and around the former aerospace facility is polluted with several compounds, including very high levels of perchlorate – a main component of rocket fuel.

The Aerojet campus was added to the National Priorities List (NPL) in 1983. Since then, Aerojet and regulatory agencies (EPA, California Department of Toxic Substance and Control (DTSC), and the California Central Valley Regional Water Quality and Control Board (RWQCB)) entered into a Partial Consent Decree (PCD), obligating Aerojet to perform a Remedial Investigation/Feasibility Study. Over the years the PCD has been modified to allow for an Operable Unit approach the Remedial Investigation/Feasibility Study. Approximately 5,900 acres of the Aerojet campus are currently included in the Superfund Site and undergoing investigation, monitoring, and remediation under various Operating Units.

On September 20, 2011, the EPA issued an order requiring Aerojet to conduct a cleanup of rocket fuel-polluted groundwater at the “Aerojet General Corporation Superfund Site” in Rancho Cordova. This groundwater cleanup represents the latest phase of a long-term decontamination effort at the site. Pursuant to the September 2011 enforcement orders, Aerojet must fund and construct a water treatment facility that will limit water contamination within set boundaries and purify some 25 million gallons of groundwater daily in order to prevent the loss of additional drinking water supplies.

The project site includes large portions of Operable Units 7, 8 and 9 and the Perimeter Groundwater Operable Unit (OU 5). In Plate PD-4, Operable Unit 7 is labeled as Island

Plate PD-4: Aerojet Superfund Operable Units in Relation to Project Site



OU, Operable Unit 8 is Eastern OU, and Operable Unit 9 is Central OU. Aerojet's obligations under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) are ongoing and have not yet been completed. Aerojet has been investigating these areas since the late 1980's and has a very good understanding of the extent of chemical impacts. The primary chemicals of concern are addressed in Chapter 9, Hazardous Materials. Contamination is confined to soil within the constraint areas; however, chemicals have leached from soil vertically beneath the constraint areas to groundwater, which is at an approximate depth of over 40 feet below ground surface. Additional investigations to refine cleanup areas will be ongoing as required by the PCD. A 100-foot buffer has been placed around all locations where concentrations of chemicals exceed agency defined cleanup levels. This evaluation was conducted in 2004 and is in the process of being updated by Aerojet to current regulatory requirements. While the evaluation may result in minor changes to the constraint areas, there will be a minimum 100-foot buffer around the contaminated areas, prior to releasing the area for mining, to ensure mining does not encroach into contaminated areas. Project operations will place a fence around these contaminated areas prior to mining to ensure they are not encroached upon.

Surrounding Land Uses

The predominant land uses in the general vicinity of the project are aggregate mining, industrial, and open space. Separate mines operated by Granite and Teichert (subject to separate mining and reclamation entitlements) are located to the south and east of the site. A material transport and aggregate crushing and construction material recycling business operated by G&R Trucking is located to the south of the site. Aerojet's industrial and commercial operations are scattered throughout the project boundary and its surroundings. The closest existing residential community is located approximately 3,800 feet to the northeast of the project boundary across US Highway 50. Other residential communities have been approved for development in proximity to the project, including the Glenborough, Easton Place, and Rio del Oro Specific Plans. These areas may develop during the life of the project.

Plate PD-5 provides a visual overview of the adjacent master planned areas in the vicinity of the proposed project. Plate PD-6 shows the approximate boundaries of the proposed mining project with Easton highlighted (Easton overlay and aerial image is taken from the Sacramento County Parcel Viewer).

Plate PD-5: Project Boundary in Relation to Planned Residential Uses

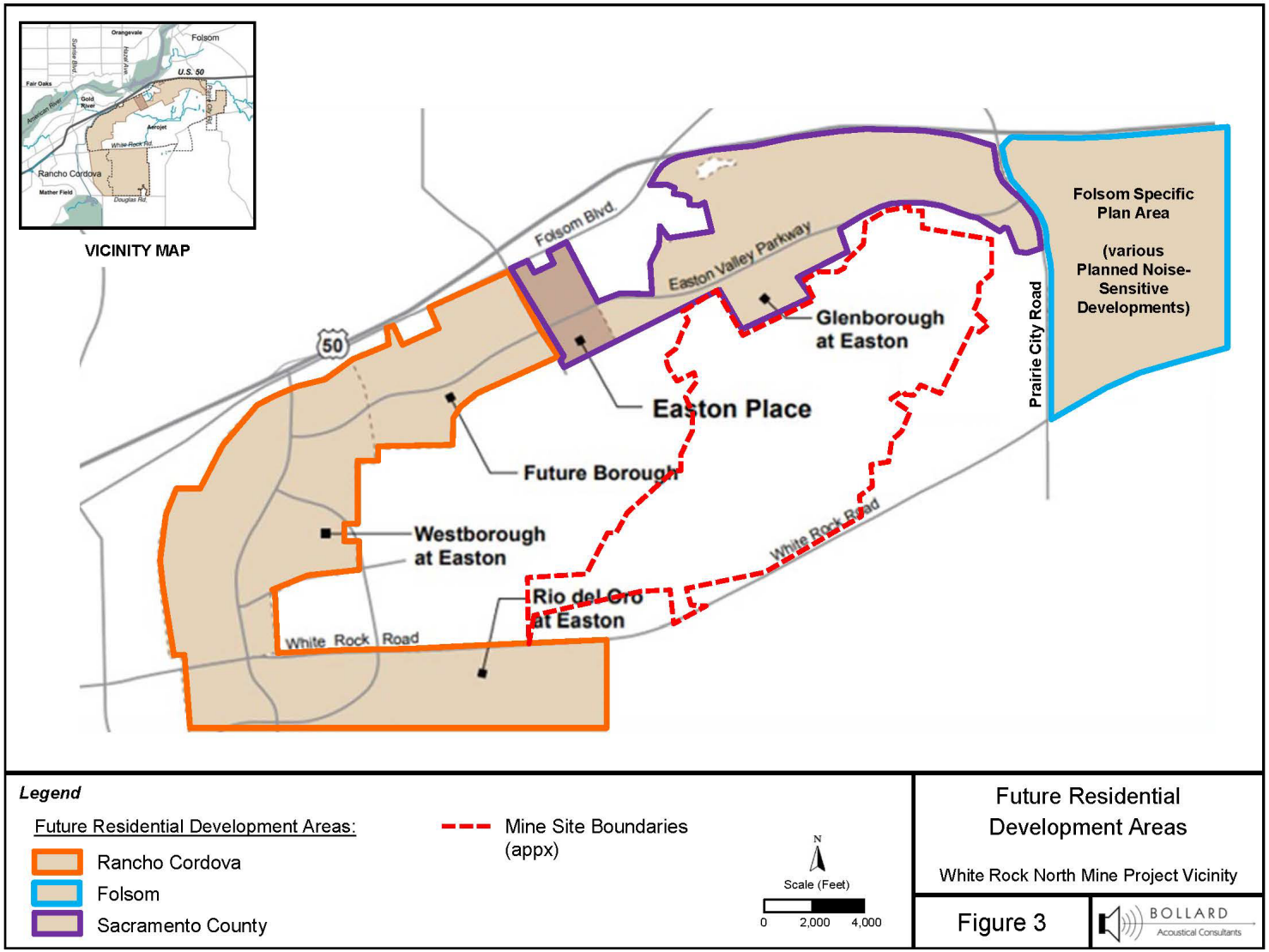
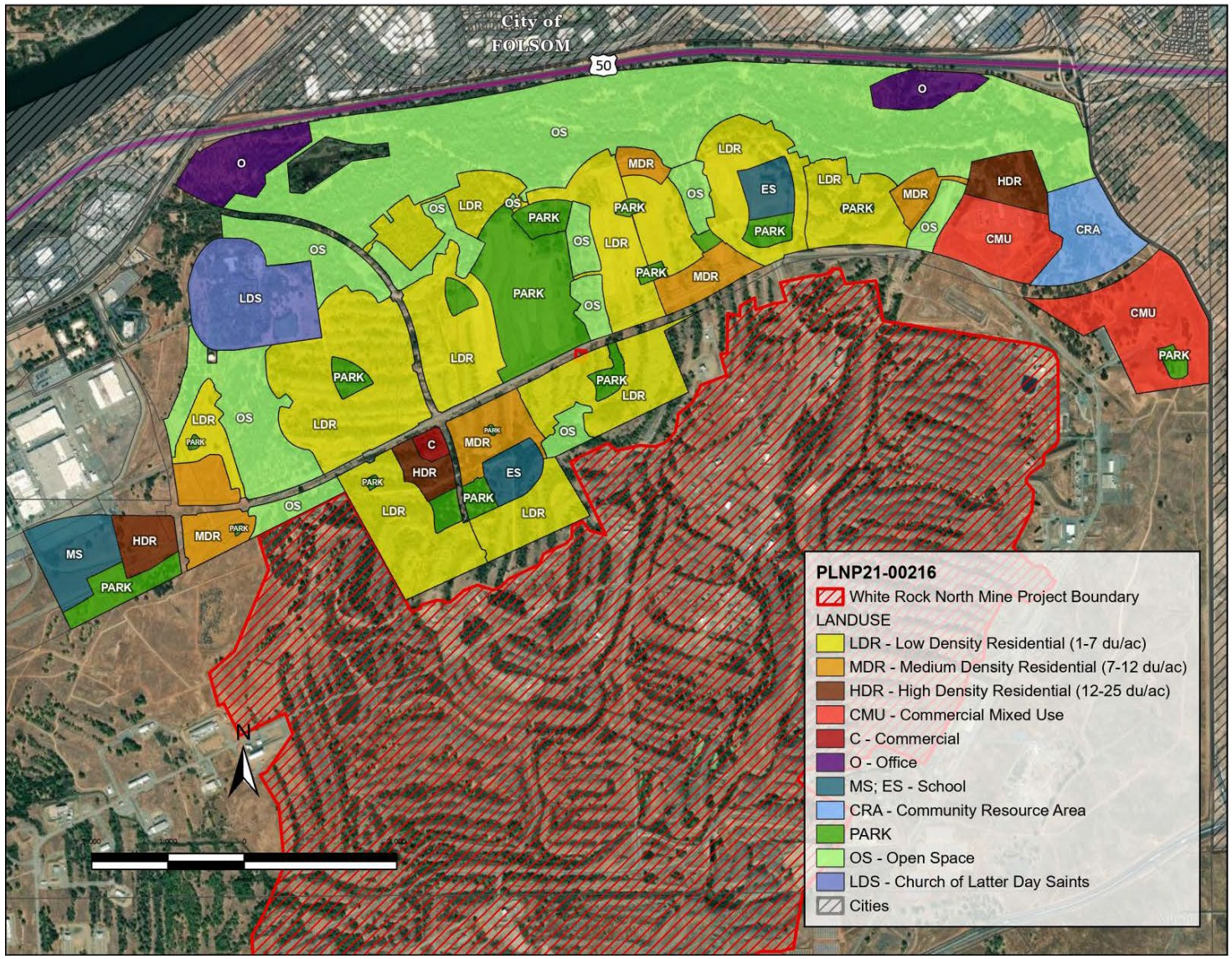


Plate PD-6: Land Use of Glenborough at Easton and Project Site



PROJECT PROPOSAL

The proposed project would mine and transport up to 25 million tons of sand and gravel over a period of 20 years with a production limit of 3 million tons per year. Materials to be mined consist primarily of sand and gravel in existing mine tailings. The mining plan is proposed in three phases, as illustrated in Plate PD-7 and Plate PD-8, and would involve mining 991.5 acres of the ~2,136-acre site.

Mined materials would be transported off-site via a new conveyor connection to the existing, separately permitted, Grantline aggregate processing plant operated by Teichert (Plate PD-3). In order to facilitate this connection, approximately 0.9 miles of new conveyor would be built including a new undercrossing at White Rock Road (Plate PD-9). The portion of the new conveyor system on Aerojet property and the undercrossing would be covered under this permit authorization. The portion of the new conveyor south of White Rock Road would be separately constructed by Teichert consistent with the Use Permit governing that property (1987-1727) and the County's substantial compliance determination (PLNR2023-00136) regarding the conveyor extension, as discussed later in this Chapter. All physical impacts associated with the construction and eventual removal of the conveyor system are discussed in relevant topical chapters of this EIR.

The mining plan has been developed to focus on areas of existing tailings containing aggregate material, while avoiding the number of existing constraints that exist on the Aerojet property from historical uses. Remediation efforts from historical uses are ongoing on the project site (see EPA Superfund Designation above). The mining plan has been developed to avoid known contamination areas, and a one hundred foot buffer has been added around contaminated areas to avoid potential encroachment from the project.

Additionally, the project site contains infrastructure that the mining plan has been designed to avoid. Buildings and structures associated with historical activities are distributed across the site, and Sacramento Municipal Utility District (SMUD) has existing overhead 69/12kV facilities within the project boundaries (Plate PD-10). Subsurface infrastructure associated with potable water and industrial water are located on the project site, as well as subsurface and above surface monitoring and extraction wells associated with ongoing remediation activities on the property (Plate PD-11). The project will not interfere with existing infrastructure or remediation activities. In the event relocation of power poles or power lines is necessary, such activities would be carried out in coordination with SMUD and Aerojet.

Since the release of the NOP, the mining plan has been further refined to avoid jurisdictional waters, elderberry shrubs, native trees and the known contaminated source areas, as shown on Plate PD-7.

Plate PD-7: Phased Mining Plan

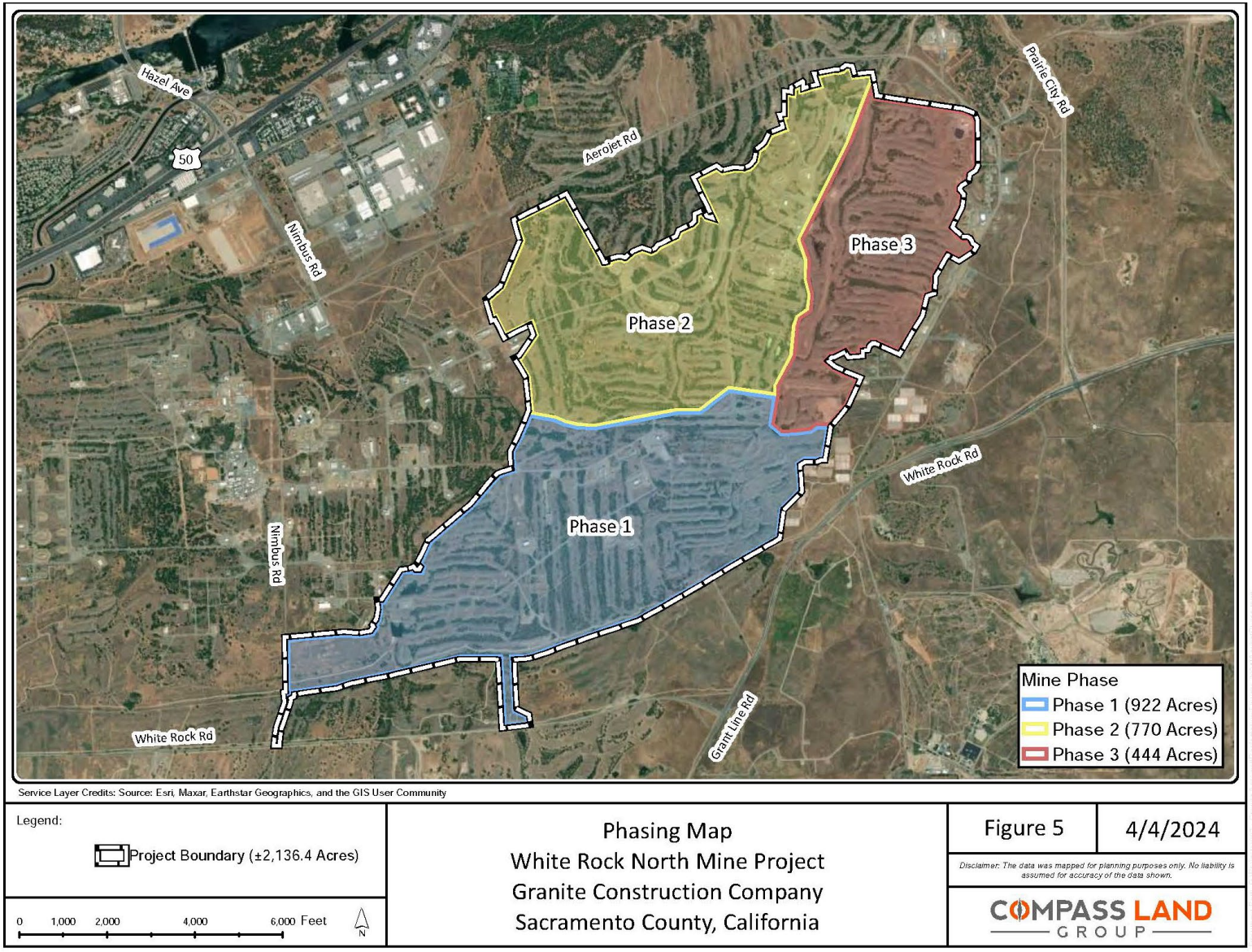


Plate PD-8: Mining Plan Avoidance of Protential Hazardous Material Sites

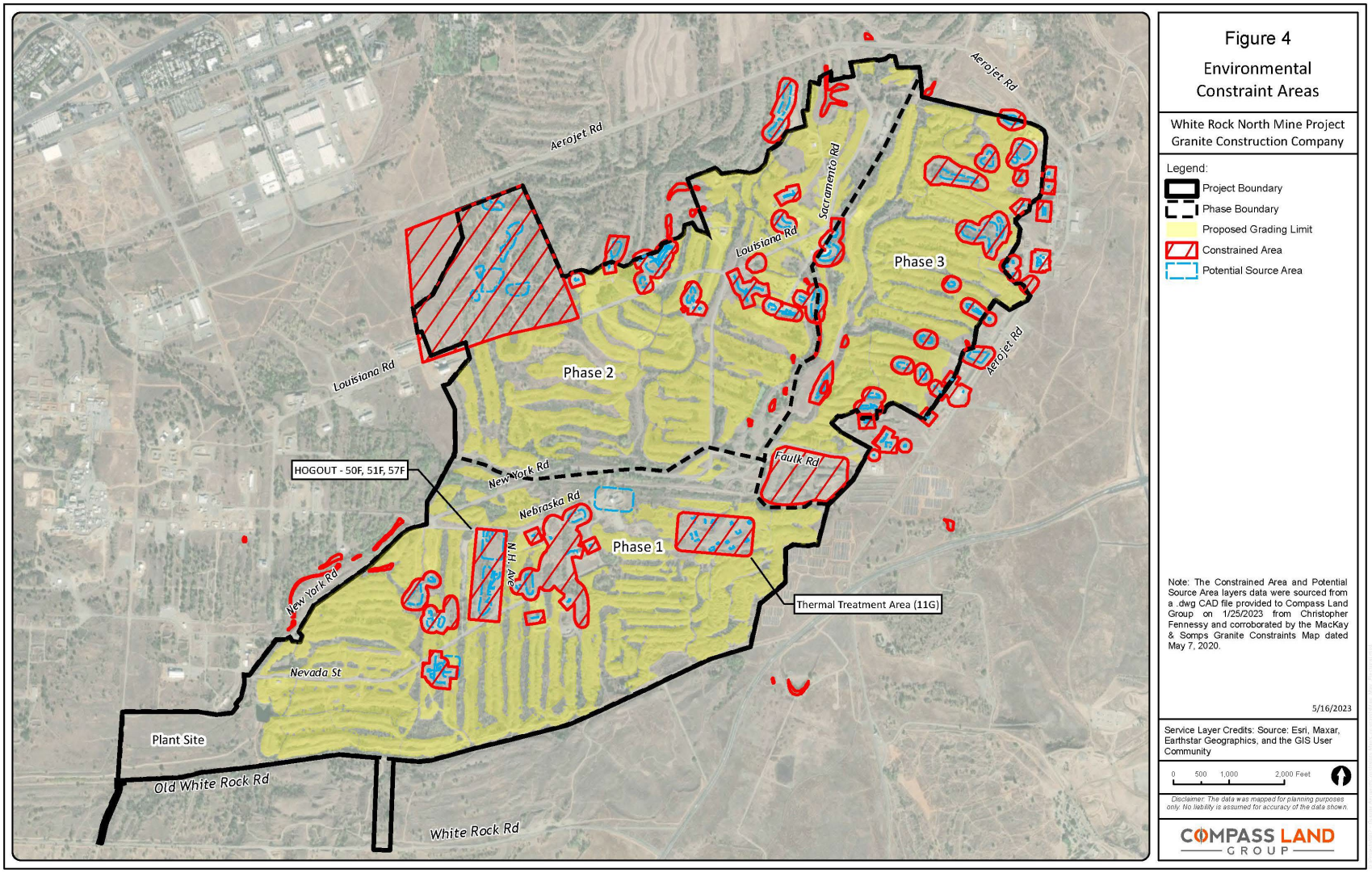


Plate PD-9: Conveyor Undercrossing



Plate PD-10: Electrical Infrastructure

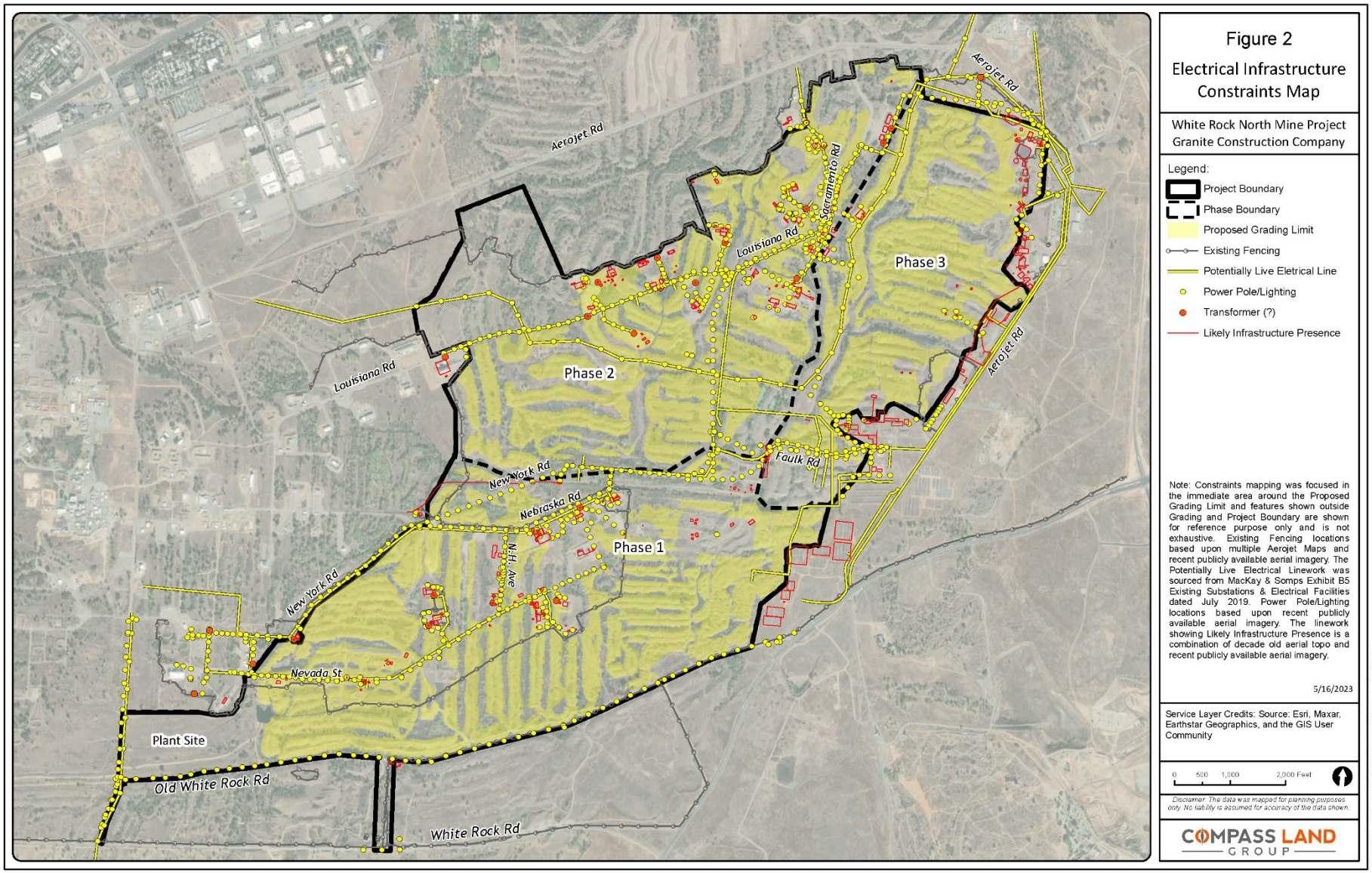
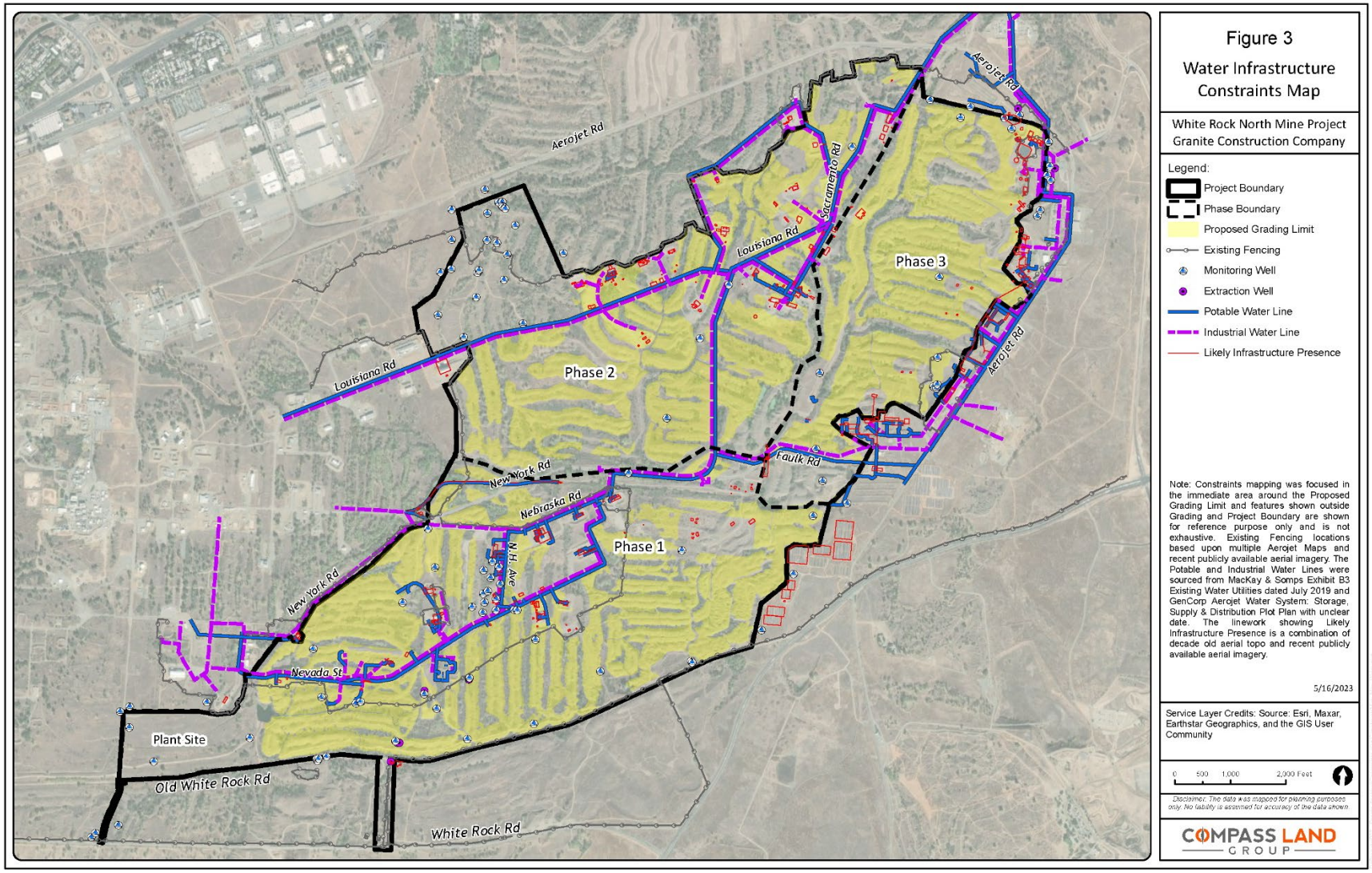


Plate PD-11: Water Infrastructure



Equipment, Stockpiles, Settling Ponds

The proposed project involves the recovery of aggregate material from old tailings that were deposited on top of the ground. Equipment for mining and reclamation may include: scrapers, bulldozers, excavators, front-end loaders, motor graders, skip-loaders, compactors, water trucks and various service vehicles. The proposed mining process will not involve the on-site processing of aggregates or the use of settling ponds. Water necessary for dust control will be sourced off-site, from either public utility metered water supply or from an off-site well south of White Rock Road. The project does not propose any uses (such as settling or process water ponds) that would discharge waters in a manner that affect the groundwater plume or impede Aerojet's remediation activities. The raw material may be stockpiled until it is transported to the conveyor which will move the material to the off-site, permitted, processing plant. Stockpile locations will be coordinated with Aerojet to minimize impacts to site remediation equipment and to reduce visual impacts. Aerojet also has the contractual right to eliminate areas for mining if mining would interfere with the approved Easton Place / Glenborough land use plans.

Screening, Lighting and Security

Although Zoning Code Section 4.8.11.J requires a landscape plan, the SPA Implementation Agreement only requires a landscaping plan when mining activities are within 500 feet of residences or public roadways. The project site is not located near any residences and is located within the future boundaries of the Aerojet property. The project site is located more than 1,000 feet from the nearest public road, White Rock Road and due to the existing topography (berms, vegetation and open space) the project site is not visible. As such, site screening and landscaping is not proposed.

Mining operations would normally occur during the daytime hours; however, if night lighting is necessary, portable light towers would be placed at the work area and directed downwards and shielded so as not to illuminate public roads (see Operational Hours below).

Access to the mining site will be controlled to restrict unauthorized access and ensure public safety. A new, separate, gate will be installed off of Nimbus Road for access by project personnel and visitors. Fences and gates will be installed around active mining areas and additional fencing will be installed as necessary as mining progresses. Areas along public rights-of-ways will be fenced with chain-link topped with barbed wire or similar. Mining perimeters internal to the Aerojet campus, and not accessible to the public, will be fenced with post and cable, or similar, with warning signage.

Culvert Crossings

The project will improve existing culvert crossings to support heavy equipment and haul truck access associated with Phase 1 mining activity. To support mining operations, the project proposes to widen and improve existing roadway culvert crossings at two locations, referred to as Culvert Crossing 1 (Plate PD-12) and Culvert Crossing 2 (Plate PD-13). The existing 35-inch diameter culverts are damaged and not capable of safely

supporting heavy equipment and loaded haul trucks to be used in the mining operations. In addition, the existing roadways are too narrow to allow for single lane of travel plus berms on each side to comply with the mining safety requirements.

For Culvert Crossing 1, the existing roadway culvert crossing will be widened from approximately 15 feet to 20 feet to provide for single lane of travel with safety berms on both sides that will comply with Mine Safety and Health Administration (MSHA) requirements. The existing 20-foot-long, 26-inch diameter culvert will be replaced by a new 30-foot-long, 36-inch diameter culvert.

For Culvert 2, the existing roadway culvert crossing will be widened from approximately 15 feet to 20 feet to provide for single lane of travel with MSHA safety berms on both sides. The existing 50-foot-long, 26-inch diameter culvert would be replaced by a new 50-foot-long, 36-inch diameter culvert.

Construction of both culverts and crossings will occur during dry season when flows in the ditch are either non-existent or very minimal. If needed, a small pump will be used to divert the flow around the construction area to keep the ditch dry and reduce the possibility of sediment contamination. Debris and excess materials will be hauled off-site and disposed of in accordance with local and state requirements.

Culverts are anticipated to consist of corrugated metal pipes or corrugated polyethylene pipes. Once culvert pipes are in place, the contractor will use the excavator to place and compact soil over the culvert to re-establish the new roadway crossing. The widening of the roadway will require the placement of fill material in waters. In addition to re-establishing the existing roadway section, it is assumed that up to 10 feet of additional fill may be necessary on both sides to widen the roadway and establish a 2H:1V slope down to the ditch. The roadway will then be resurfaced with gravel.

Environmental analysis and mitigation will be included in the EIR to support issuance of state and federal regulatory permits connected to the culvert crossings (i.e., California Department of Fish and Wildlife (for the 1600 Streambed Alteration Agreement), Regional Water Quality Control Board (for the 401 Water Quality Certification), and United States Army Corps of Engineers (for the 404 permit).

Truck Traffic Management Plan

The project is located within the “participation area” of the Eastern Sacramento County Quarry Truck Management Plan (“TMP”) approved by County Board of Supervisors Resolution #2011-0938. The TMP affords reasonable and continuous direct access for up to three (3) million tons per year on White Rock Road, not including local deliveries (per TMP Exhibit B, TMP Funding Program, Section 15). This allowance would accommodate the full production scope of this project. However, mined materials will be transported by conveyor to Teichert’s existing Grantline Plant; as such truck transportation of mined material is not allowed absent an amendment of the entitlement.

Plate PD-12: Culvert Crossing 1

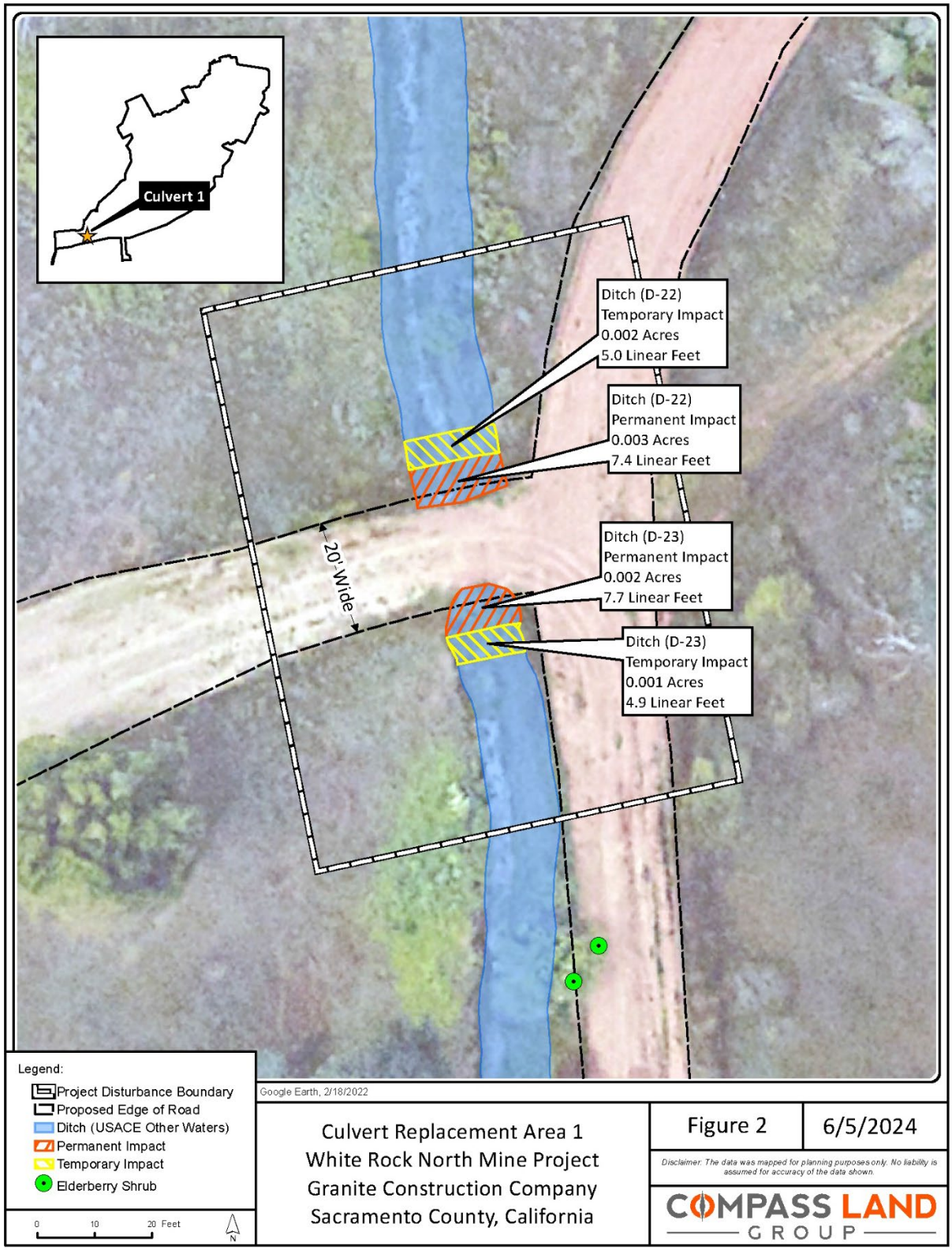
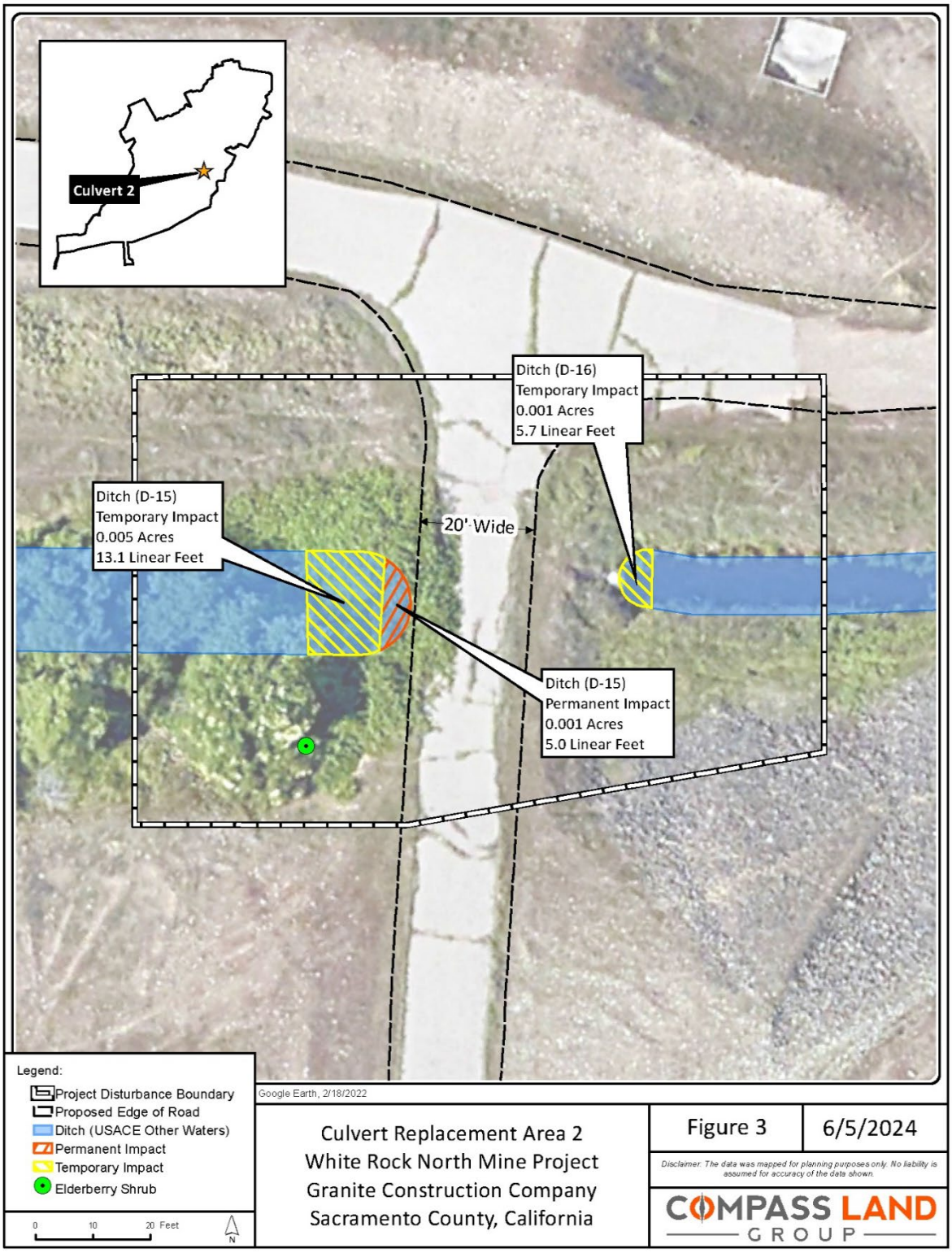


Plate PD-13: Culvert Crossing2



Operational Hours

The proposal requests operating up to 24 hours per day, 299 days per year. Operations would occur Monday through Saturday, year-around, excluding 13 State and federal holidays. About 12 employees would be on the project site at any time during operation. On-site employee and truck traffic will rely on the existing on-site roads as haul routes. Employee and or visitor parking will be provided towards the entrance to the project site and has sufficient space to accommodate all parking needs.

The project proposes hours that are different from operational hours allowed by the Sacramento County Zoning Code Section 4.8.12.A, which limits mining hours to Monday through Friday 6:00 am to 10:00 pm, and Saturdays from 6:00 am to 3:00 pm, with extended hours allowed for maintenance.

Reclamation Plan

A draft Reclamation Plan has been prepared in accordance with Sacramento County Code, Chapter 20.04, "*Surface Mining and Reclamation*" and SMARA, and is attached as Appendix PD-2. The planned end use for the mining areas is undeveloped land, and the planned end use for the conveyor connection area is native grassland, which are readily adaptable to future uses by the landowner as allowed under the Aerojet SPA. As mining progresses, reclamation will generally occur concurrently as the tailing piles are excavated to their final design elevations. Flexibility to the final reclaimed height is requested if piles are not suitable to mine. The operator will leave the mined areas in a fine graded condition with no low areas remaining for ponding to occur. Finish slopes will be 1.75 horizontal :1 vertical or flatter. Fences, site access improvements and utilities may be left to facilitate future use of the property.

The planned end use for the conveyor connection is native grassland. The conveyor system, mining equipment, and undercrossing at White Rock Road will be removed. Temporary interior access roads and conveyor corridors will be decommissioned by removing conveyor footings, road base and then ripping, disking, and/or scarifying this area followed by reseeding with native grassland seed mix, as specified in the Reclamation Plan dated April 2024. The proposed seed mix consists of California Brome, Blue Wildrye, Three Weeks Fescue, and Native Clover (the overall species mix and application rate may be modified depending on availability and suitability to the area).

Extension of Conveyor on to Teichert's Grantline Clark Property

As shown on Plate PD-3, the proposed project would require the construction of approximately 0.5-mile-long aggregate conveyor connection from the southern terminus of the proposed conveyor at the south end of the proposed conveyor undercrossing of White Rock Road to Teichert's existing conveyor line to its Grantline aggregate processing plant. The proposed length of conveyor would be located on Teichert's 587-acre Clark mine site (California mine ID No. 91-34-0023). Mining and processing activities on the Clark site are governed by an existing Use Permit (1987-1727) that was approved by the County in 1989.

In 2023, in anticipation of the need to extend its existing conveyor line to accommodate aggregate from the White Rock North Mine project, Teichert submitted a request to the County for a determination of whether the approved Use Permit for the Clark mine site (1987-1727) would need to be amended to allow the installation and operation of the aggregate conveyor needed to connect its existing aggregate conveyor line on the Clark site to the southern terminus of the proposed conveyor undercrossing for the project at the south side of White Rock Road.

On August 15, 2023, the County issued a determination (PLNR2023-00136) that the proposed modifications / additions to Teichert's existing conveyor alignment are substantially compliant with the approved Use Permit (1987-1727) for the Clark site. The substantial compliance determination noted that the material from the Clark site was originally hauled by trucks to a processing plant located in the City of Folsom, but after the construction of the Grantline processing plant around 1995, the Clark mine site was connected to the Grantline processing plant via an electric conveyor. The use of electric conveyors instead of haul trucks reduces impacts to roadways and emissions from haul trucks. The existing financial assurances for the Clark site account for the removal of the electric conveyor system and the reclamation of the area under the conveyor system. Moreover, there are no conditions in the Clark site Use Permit that limit the use or amount of conveyor systems on the site. There is an existing condition of approval that no mining or associated activities take place near the vernal pools located on the eastern portion of the Clark site. The proposed conveyor would be located on the western side of the site and not near the vernal pool. Accordingly, the County concluded that the proposed installation and operation of the conveyor extension for the White Rock North Mine project is substantially compliant with all terms and conditions of the Clark site Use Permit (1987-1727). A copy of the County's substantial compliance determination is included in Appendix PD-3.

PROJECT PROPONENTS

PROPERTY OWNER:
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c/o Easton Development Company
Attn: Michael Pavik
P.O. Box 1209
Folsom, CA 95763

APPLICANT:
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Attn: Pete Dwelley
4001 Bradshaw Road
Sacramento, CA 95827

CONSULTANT:
Compass Land Group
Attn: Yasha Saber
4235 Forcum Avenue, Suite 100
McClellan, CA 95652

ENGINEER:
Chang Consultants
Attn: Wayne Chang
P.O. Box 9496
Rancho Santa Fe, CA 92067

AREAS OF KNOWN CONTROVERSY

A Notice of Preparation (NOP) was published on November 9, 2022, that described the proposed project and requested comments on the scope and content of the EIR from public agencies and the general public. During the 30-day NOP comment period, an agency scoping meeting was held on December 1, 2022 and a public scoping meeting held on November 30, 2022. Input received as a result of the NOP and scoping meetings relate to impacts on hazardous materials and electrical utilities. Specifically, the California Department of Toxic Substances Control in coordination with the State Regional Water Quality Control Board, noted that the proposed site plan covers areas of the Aerojet campus that have not been investigated or remediation plans prepared. In response to this letter, the applicant has revised the site plan and therefore the project mining footprint presented in this EIR is slightly smaller than what was presented in the NOP. All written comments received on the NOP are provided in Appendix PD-4.

INTENDED USES OF THE EIR

The EIR is intended to apply to the project approvals listed below, as well as to any other approvals that may be necessary to implement the proposed project. The County of Sacramento is the CEQA lead agency for the project. The Sacramento County

Planning Commission and the Board of Supervisors will use the information contained in the EIR in evaluating the proposed project and rendering a decision to approve or deny approvals of the project. County of Sacramento officials and agencies will use the EIR for other County permits and approvals of the project authorized or required by the County code and/or state law. The EIR will also serve as the CEQA document for approvals of the project by other local and state agencies with discretionary authority regarding the project (i.e., Responsible Agencies). Responsible Agencies pursuant to CEQA Guidelines Section 15381 may include but are not limited to California Department of Fish and Wildlife, the Central Valley Regional Water Quality Control Board and State Water Resources Control Board, California Department of Toxic Substances Control, and the Sacramento Municipal Utility District. Federal agencies that may rely on this EIR in taking action on the project include the United States Fish and Wildlife Service, and United States Army Corps of Engineers.

Table PD-2 includes information required by Section 15124 of the CEQA Guidelines and summarizes the following intended uses of the EIR:

- A list of agencies that are expected to use the EIR in their decision making.
- A list of permits and other approvals required to implement the project.
- A list of related environmental review and consultation requirements required by federal, state, or local laws, regulations, or polices.

Table PD-2: Subsequent Permits, Approvals, Review, and Consultation Requirements

Agency	Approval
Sacramento County Board of Supervisors	Final Environmental Impact Report Certification
Sacramento County Board of Supervisors	Board Review, Reclamation Plan, SPA Implementation Permit, Use Permit, and Development Agreement
Sacramento County Planning Commission	Recommendation to the Board of Supervisors regarding Board Review, Reclamation Plan, SPA Implementation Permit, Use Permit, and Development Agreement
Sacramento Municipal Utility District (SMUD)	Public Utility Easements
County of Sacramento Division of Planning and Environmental Review	Work Authorization Permit
County of Sacramento Site Improvement Section	Land Grading Erosion Control Permit or Improvement Plans
County of Sacramento Building Permits Inspection Division	Building Permits
County of Sacramento Department of Transportation	Encroachment Permits
Sacramento County Environmental Management Department	Septic Tank Abandonment
Sacramento Metropolitan Air Quality Management District	Fugitive Dust Prevention and Control Plan
Regional Water Quality Control Board – Central Valley Region	Section 402 National Pollutant Discharge Elimination System Permit Compliance, Waste Discharge Permit, Section 401 Water Quality Certification
California Department of Fish and Wildlife	Streambed Alteration Agreement, California Endangered Species Act Take Permit
U.S. Army Corps of Engineers	Section 404 Permit
U.S. Fish and Wildlife Service	Federal Endangered Species Act Take Permit, Section 7 Consultation
Department of Toxic Substances Control	Notification requirements per the Partial Consent Decree (PCD)

3 AESTHETICS

INTRODUCTION

This chapter addresses the potential aesthetics impacts associated with the proposed White Rock North Mine project (project). The analysis in this chapter considers the potential impacts of the project related to viewsheds, existing visual character, and new sources of light and glare that could affect daytime or nighttime views in the project area.

ENVIRONMENTAL SETTING

REGIONAL LANDSCAPE

Sacramento County lies near the center of California's Central Valley, at the southern end of the Sacramento Valley. Open space views within the valley region are generally characterized by broad sweeping panoramas of flat agricultural lands and open space dotted with trees, divided by numerous rivers and creeks. To the east, the Sierra Nevada and their foothills form a background, and the Coast Range provides a backdrop on the western horizon.

PROJECT SITE CHARACTERISTICS

VISUAL CHARACTERISTICS

The project site topography has flat to gently rolling terrain, elevation ranging from 190 and 325 feet above the mean sea level. Much of the change in grade is accounted for by the artificial slopes created through hydraulic mining operations called "dredge tailings." The tailings create a complex landscape of linear cobbles interspersed with ravines and basins. Interspersed between the tailings landscape are multiple buildings associated with Aerojet's testing facilities. The presence of buildings within the mining complex has also resulted in a limited public viewshed with Aerojet having restricted public access to a large buffer up to primary roads such as Prairie City Road to the east of the project site, White Rock Road to the south with berms, natural foliage, and security fencing that obscures the public's view of the property's interior.

LIGHT AND GLARE

The unincorporated urban areas of the County include existing sources of daytime glare and nighttime lighting and illumination. Sources of daytime glare include direct beam sunlight and reflections from windows, architectural coatings, glass and other shiny reflective surfaces. Such glare usually only impacts the immediate environment, except in cases where buildings are high-rise and can be seen from greater distances. Nighttime light illumination and associated glare can be divided into stationary and mobile sources. Stationary sources of nighttime light include structure illumination,

decorative landscape lighting, and lighted parking lots. Mobile sources are the vehicles traveling on roadways. The unincorporated rural and agricultural areas of the County, which includes the site, are sparsely developed. These rural land uses typically do not generate substantial amounts of glare, lighting, or illumination, and the ambient nighttime lighting and illumination levels are very low.

Regulatory Setting

Sacramento County General Plan

The *Sacramento County General Plan of 2005-2030* (Sacramento County 2020) includes the following policies related to aesthetics that apply to the proposed project. Any potential environmental impacts related to these policies will be discussed in the Impacts and Analysis section below.

LU-18: Encourage development that complements the aesthetic style and character of existing development nearby to help build a cohesive identity for the area.

LU-31: Strive to achieve a natural nighttime environment and an uncompromised public view of the night sky by reducing light pollution.

In addition to the policies above, the Conservation element states its primary goal as: "Natural resources managed and protected for the use and ***enjoyment*** of present and future generations while maintaining the long-term ecological health and balance of the environment" (Sacramento County 2020). The concept of enjoyment includes appreciation of scenic resources and visual beauty.

Sacramento County Zoning Code

The Sacramento County Zoning Code (Zoning Code) implements the land use policies of the County. The Zoning Code ensures all development conforms to these policies by regulating land use and providing development standards.

Zoning Code Section 4.8.12, Surface Mining (SM) Combining Land Use Zone, Mining Administration and Procedures, contains regulations pertaining to surface mining operating standards. The following sections of the SM overlay are pertinent to this discussion of aesthetics.

4.8.11.K. Lighting Plan

The applicant will submit a lighting plan that outlines performance criteria and demonstrates that neither a public rights-of-way nor adjacent properties will be significantly illuminated during aggregate mining operations. The lighting plan shall describe site-specific standards including a requirement that a minimum of 90 percent of the light shall be projected downward and within the mining site boundaries. Shielding will be used, as needed, to minimize glare and to minimize light projection into the sky.

Approval of the lighting plan is required before a Work Authorization Permit will be issued as provided in Section 4.8.5.

4.8.12.B. Fences

Unless otherwise provided by the condition of the use permit, fence requirements shall apply to the specifications in this section, and place around the entirety of the project boundary.

4.8.12.D. Visual Screen

The Board of Supervisors may, as a condition of the use permit, require a visual screen when the mining site is adjacent to a public street and/or potentially incompatible uses.

4.8.12.F. Mining Setbacks

Setbacks, as applied to this subsection only, are defined as follows:

- Total Setback: The distance from the residence to edge of the pit at reclamation. Typically, the total setback will include both residential and mining land.

- Unmined Setback: The distance on mining property that is to remain unmined. The minimum setback is ten (10) feet, and the maximum required setback is 50 feet.

- Reclaimed Setback: The distance on mining property that may be mined but must be returned to the original grade at reclamation. It may range from zero (0) up to 15 feet.

    - If the habitable structure is 80 feet or greater from the property line, then the unmined setback at reclamation shall be no less than ten (10) feet on the mining property, and the reclaimed setback shall be no less than 15 feet on mining property (see Section 4.8.12.F, subsection 2).

    - If the habitable structure is between 80 feet and 40 feet from the mining property, then the setback standards of Table 4.2 shall apply. In no case will the total setback be less than 90 feet.

    - If the habitable structure is less than 40 feet from the mining property line, then the unmined setback at reclamation shall be no less than 50 feet on the mining property. The reclaimed setback may be zero (0).

Unless otherwise provided as a condition to the use permit, mining areas shall be set back from property lines, public streets, and sewage disposal systems as follows:

1. Periphery of Mining Site: A 25-foot minimum setback from the property line is required, the first five (5) feet of which shall consist of undisturbed land.

2. Periphery of Mining Site Adjacent to Habitable Structures and/or Potentially Incompatible Uses: A 25-foot minimum setback from the property line is required,

the first ten (10) feet of which shall consist of undisturbed land. For habitable structures existing at the time of mining use permit issuance (including habitable structures primarily used as a residence on a non-residentially zoned property) a minimum of 50 feet of unmined land between the structure and mining activity is required. The distance from habitable structures is to be measured from the edge of a primary residence or residential accessory dwelling, whichever is closer to the property line. The distance is not to be measured from ancillary structures such as pools, decks, and patios.

3. Mining Sites Adjoining Public Streets: A 25-foot minimum setback from all public streets consisting of entirely unmined land is required. For right of ways with Public Utility Public Facility Easements (PUPFEs), there shall be a 31-foot minimum setback from all public streets consisting entirely of unmined land.

4. Mined Setback Areas: Setback areas consisting of mined land shall be reclaimed to original grade within one year or less of completion of mining.

Significance Criteria and Methodology

Significance Criteria

Based on Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact related to aesthetics if it would:

1. Have a substantial adverse effect on a scenic vista;

2. Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings, within a state scenic highway;

3. Except as provided in Public Resources Code Section 21099, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from public accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality; or,

4. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Methodology

The United States Department of Transportation, Federal Highway Administration (FHWA) developed a manual to aid in the preparation of visual assessments for highway projects. Although the proposed project is not for a highway or other roadway, the key concepts established by the FHWA apply to all visual settings and were used to help evaluate the visual character and quality of the region and project site. Many of these same key concepts are used to evaluate aesthetics in many contexts, including artistic compositions, architecture, and residential landscaping design. For the purposes

of landscapes, the concepts of vividness, intactness, and unity defined visual quality. Definitions of key terms and the project impacts to visual quality and character are described below.

- Vividness is a measure of the visual impression that remains in the memory of the viewer (e.g., Niagara Falls). Vivid visual experiences are striking and distinctive.

- Intactness is the visual integrity of the natural and built landscape. Intact landscapes are unobstructed visual experiences.

- Unity is the coherent inter-compatibility of connected landscape elements. A high degree of unity creates a harmonious visual pattern.

Visual character is derived from visual pattern elements and their dominance, scale (apparent size relationship), diversity, and/or continuity (uninterrupted flow of patterns). Visual pattern elements include form (visual mass or shape), line (silhouette), color, and texture (apparent coarseness). Although visual character and quality can be described objectively, there is no official established process that will identify all areas of high visual quality. Therefore, in part visual quality is often defined by viewer sensitivity. Viewer sensitivity is defined using the following criteria:

- Visibility of resources in the landscape;

- Proximity of viewers to the visual resource;

- Elevation of viewers relative to the visual resource;

- Frequency and duration of views;

- Number of views; and

- Types and expectations of individuals and viewer groups.

Viewer Groups

The visual experience is a combination of visual resources and viewer response. Different viewer groups respond differently to visual environments. The opinions or preferences of different groups depend on viewer activity and awareness, local values and the cultural significance of the visual resources. Viewer activity affects the viewers' ability to perceive the landscape. Depending on the activity, a viewer may be attracted to or distracted from the landscape. For example, a person reclining in the backyard or sitting on a bench will be encouraged to view the landscape, whereas a person driving along a road on an errand will be distracted from the landscape and concentrate more on the road itself.

Viewer awareness also affects the viewer's receptivity to the landscape. Viewer awareness is affected by position, preconceptions, and recent visual experience. If

viewer sensitivity is very high, any visible change in the area may be discouraged. The following groups may have views of the project and are discussed further in the analysis below: commuters travelling Prairie City Road and White Rock Road in vehicles, and visitors / employees of Aerojet Rocketdyne facilities. If the approved development in the Easton Specific Plan area were to move forward in the time frame of the proposed mining activities, then viewer groups could also include future drivers and/or residents along Easton Valley Parkway.

Impacts Not Discussed Further

Have a Substantial Adverse Effect on a Scenic Vista

The project is not located in the vicinity of a scenic vista. Therefore, there would be ***no impact*** related to adverse effects to scenic vistas.

Substantially Damage Scenic Resources, Including But Not Limited To Trees, Rock Outcroppings, and Historic Buildings, Within A State Scenic Highway

The project is not located in the vicinity of a state scenic highway. Therefore, there would be ***no impact*** related adverse effects to scenic highways.

Impacts And Analysis

Impact Evaluation AE-1: Does the Project Substantially Degrade the Existing Visual Character or Quality of the Site and its Surroundings?

Photos were taken to supplement the following discussion and were taken from locations intended to represent the various user groups or to illustrate a point made in the analysis. Plate AE-1 is an aerial photo of the project vicinity that has been annotated to show where the photos were taken, and in which direction the camera lens was pointed. The referenced photos are shown in Plate AE-2 through Plate AE-6. It is important to note that the project has been designed with buffers, so some level of the existing terrain (including dredger tailing pilings) and vegetation will remain around the perimeter of the project. The analysis conservatively assumes the changes in the landscape, but in many cases, the viewshed for the public would be partially or fully obstructed by existing terrain and/or vegetation. The view from Prairie City Road is over 2,000 feet from proposed mining activities and has intervening buildings. The view from White Rock Road over 1,000 feet away from mining activities, and the view from the Mormon Temple is over 3,000 feet from proposed mining activities. Future viewers from Easton Valley Parkway (if Easton were to develop in the lifetime of the project) would be the most directly impacted. The project would maintain a minimum 25-foot setback from the project boundary, and the project boundary would be adjacent to the future Easton Valley Parkway right-of-way in some areas along the northern boundary.

The proposed project impacts a man-made landform (mine tailings) by returning the project site to approximately the original surface grade which existed prior to hydraulic mining activities. The project includes a reclamation plan with the end use of undeveloped land to be returned to native grassland that is adaptable for future development under the Aerojet SPA (Compass Land Group 2022: 7-9).

Viewer Groups

The degree of impact of a project, either negative or beneficial, on the visual character of the area is largely subjective. Few objective or quantitative standards are available to analyze visual quality, and individual viewers respond differently to changes in the physical world.

The project area is within the confines of an industrial campus whose access is largely restricted to the public, so there are a limited number of viewer groups that would be impacted by the project. These groups include commuters travelling Prairie City Road and White Rock Road in vehicles, and visitors / employees of Aerojet Rocketdyne facilities. If the approved Easton development were to move forward in the timeframe of the proposed mining activities, then viewer groups could also include future drivers and/or residents along Easton Valley Parkway. Drivers have only transitory views of the site as they are conducting business. The viewshed was analyzed from the publicly accessible areas surrounding the project site (see Plate AE-1). These potential locations include the Sacramento California Temple (labelled L1 on Plate AE-1), the intersection of Prairie City Road and Texas Avenue (labelled L2 on Plate AE-1), and the intersection of Prairie City Road and Grant Line Road (labelled L3 on Plate AE-1). The remaining periphery west of the property is Aerojet Rocketdyne property whose viewshed is currently restricted to employees and facility visitors only (see Plate AE-2 and Plate AE-3). The Sacramento California Temple maintains a buffer of mixed oak woodland to the south and east of the property and no tailings are visible from the property (see Plate AE-4). Prairie City Road has some open areas where the tailings can be seen by commuter traffic (see Plate AE-5 and Plate AE-6).

Plate AE-1: Public Viewshed Photo Locations

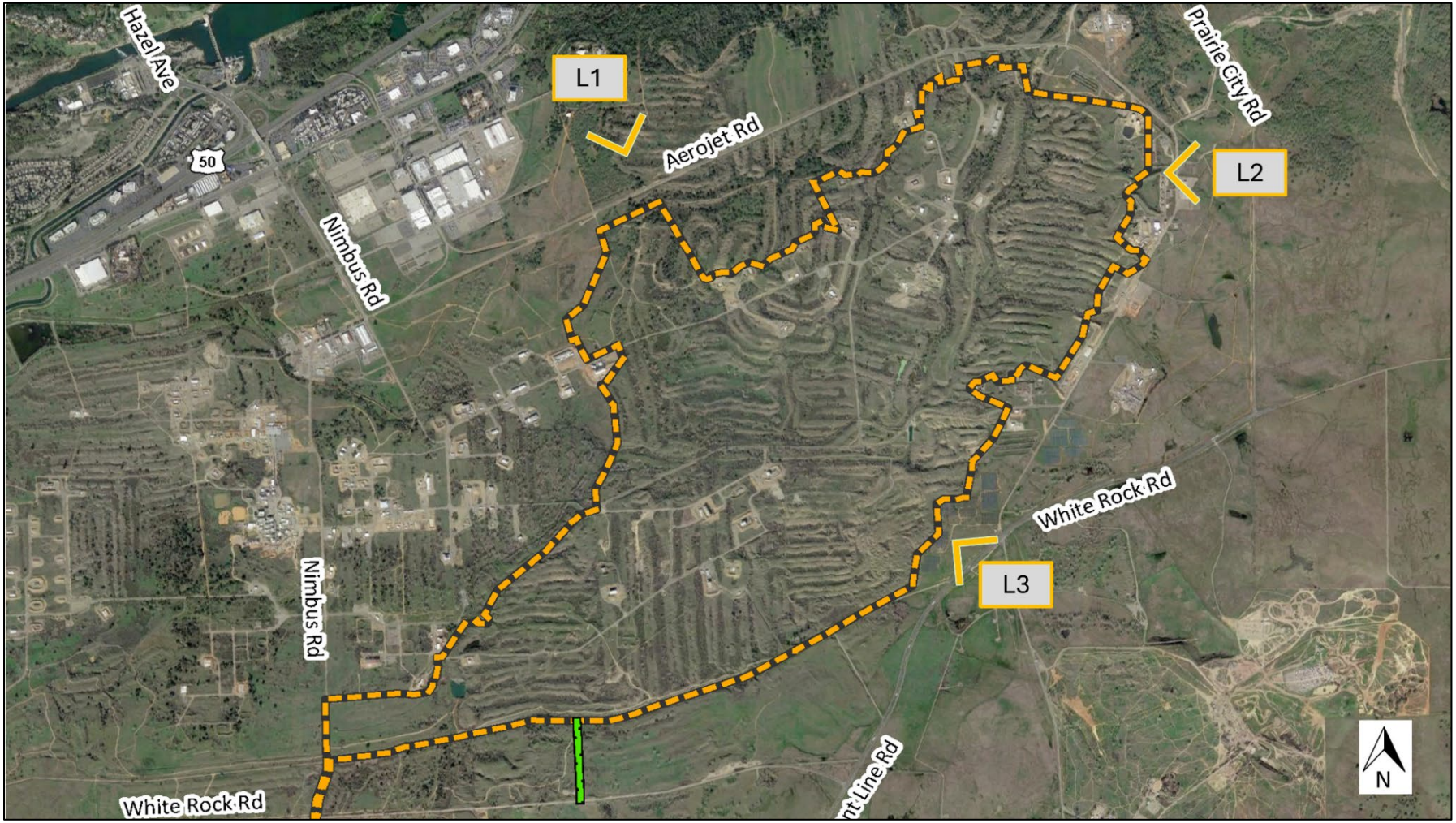


Plate AE-2: Dredge Tailings Overview from Within Aerojet Rocketdyne Property



Plate AE-3: Dredge Tailings Overview from Within Aerojet Rocketdyne Property



Plate AE-4: (L1) View from California Sacramento Temple, Facing Project Site



Plate AE-5: (L2) Prairie City Road, Facing Project Site



Plate AE-6: (L3) Prairie City Road / Grant Line Road Intersection, Facing Project Site



The aesthetics discussion is divided into three sections focusing on each of the key terms (vividness, intactness, and unity) and a fourth section that summarizes the findings. In the beginning of each section, the current visual quality and the project's impacts to visual quality will be assessed using a scale of low, moderate, and high.

Vividness

The site's current (before project implementation) vividness is assessed as low. The views are characterized by security fencing with medium- to high-density foliage which obscures most views of the tailings. Those individuals traveling on Prairie City Road and White Rock Road view mostly these natural barriers. From the open spaces where the tailings are distantly visible, it is difficult to visually identify the tailings, as many have been themselves covered in annual grasses and low foliage.

The vividness of the site will remain the same or increase through project implementation. For those temporary viewers traveling on Prairie City Road and White Rock Road, removal of the tailings along the entirety of the project boundary will not sufficiently change the vividness of the project site. To those for whom it is visible, the surface mining facility, including heavy equipment and the conveyor system will be a very distinctive feature in the landscape. However, these views are short-term and primarily experienced by commuter traffic. Though the project will make the site substantially more striking, raising the vividness to high, it is important to emphasize that this is not due to any increase in overall site attractiveness as a result of the project. Upon reclamation of the project site, distinctive terrain changes would cause a permanent increase in the vividness of the site. A view can be vividly negative or vividly positive, as determined by the intactness and unity of the view.

Intactness

The site's current (before project implementation) intactness is assessed as low. The current view is undeveloped land associated with the industrial properties of Aerojet Rocketdyne, whose intactness is interrupted by industrial buildings, security fencing, and the leftover waste from hydraulic mining operations. The view of the project area along Prairie City Road is intentionally obstructed by security fencing and undeveloped mixed oak woodland at or near the project site. A visual benefit of the current site conditions is the mixed oaks along the peripheries of the property which shield the viewer from industrial operations.

Project implementation will not result in a significant change to site intactness, which is already low for all viewer groups, and significantly interrupted by the intervening distance and terrain within the buffer area between the viewer group and future grading footprint. Future use within the entirety of the Aerojet Special Planning Area is expected to enhance intactness following the project site being returned to its approximate original grade prior to historic mining operations.

Unity

The site's current (before project implementation) unity is low. A high degree of unity creates a harmonious visual pattern. A low degree of unity has different views that are seen in the viewshed, and this creates less unity of view. The site's unity is considered low because the mixture of surrounding uses creates a lower degree of unity. The mixture of commercial, industrial, and open space / mixed oak woodland has a lower degree of unity as compared to only open space / mixed oak woodland or even contiguous industrial development.

Furthermore, the existence of the mining tailings themselves has disrupted the natural visual pattern of mixed oak forest and aquatic resources that may have once been reflective of aesthetic unity. The public currently experiences a viewshed that is not harmonious and at some points the viewer will see industrial and commercial buildings next to open space filled with man-made mining refuse. After project implementation, the grading of mine tailings to level terrain would result in unity that would remain low, or perhaps even improve, as the mine tailings have already disrupted unity of the scenic quality.

Conclusion

As described above, the baseline condition of the project site is not one that is considered high quality from an aesthetics perspective. The project would place into the area a new visual element that is not cohesive with the existing elements in the form of heavy equipment, but mining activities are temporary, and in most cases would be naturally screened through distance, terrain and vegetation. Upon completion of mining, the reclamation plan has specific performance measures that will revegetate the site with native grasses resulting in graded flats where before one saw sloped cobbles, industrial uses and grass fields. Therefore, project implementation would not adversely affect the visual quality of the area and impacts are ***less than significant.***

Impact Evaluation AE-2: Does the Project Create a New Source of Substantial Light or Glare that Would Adversely Affect Day or Nighttime Views in the Area?

The project does not contain aspects that would create glare, and does not include new permanent sources of lighting. Therefore, this discussion focuses on the potential impact of light, particularly light that would occur as a result of nighttime mining activities. Once the site has been prepared for mining; electric conveyors, security trailers, employee trailers and mobile equipment will operate within the project area. Typically, the head section of each electric conveyor is lighted. While mining may not occur on a regular basis at night, the permit will allow mining Monday-Saturday, 24 hours per day, excluding State or Federal holidays. If mining occurs at night, then nighttime lighting could include earth-moving and other construction equipment, temporary construction trailers, employee vehicles, and flood and security lighting 24 hours per day, excluding Sundays, Federal, and State holidays. Portable light towers

would be utilized to provide for a safe operating environment and move to areas of active mining.

Mining activities on the project site would occur interior to the Aerojet property, which is currently over 1,000 feet from the nearest public right of way at White Rock Road. Therefore, for Phase 1 activities, and most of the project operation, nighttime light would not adversely affect nighttime views.

A portion of the northern boundary of Phase 2 abuts portions of residential uses as specified in the Easton Specific Plan. In the event that residential uses are constructed as part of the Easton Specific Plan prior to mining the portions of Phase 2 and Phase 3, there is the potential for the mining operation lighting to impact neighboring properties and create negative impacts during nighttime operations. This would be a ***potentially significant*** impact.

Mitigation is recommended below to ensure that the project would comply with County standards outlined in the zoning code if future sensitive uses are constructed adjacent to Phase 2 in the Easton Specific Plan area. The applicant shall submit and comply with a lighting plan that outlines performance criteria and demonstrates that neither public rights-of-way nor adjacent properties will be significantly illuminated during aggregate mining operations. Lighting would be directed downward, shielded and arranged / controlled so as not to illuminate public rights-of-way or adjacent properties. If needed, portable light towers will be retrofitted for reduced lumen intensity. Implementation of this measure will reduce impacts related to light and glare to ***less than significant with mitigation.***

Mitigation Measures

Mitigation Measure AE-2: Light and Glare

If implementation of the Easton Specific Plan results in construction of public roads or sensitive uses within 500 feet of the project boundary prior to mining activities being initiated in Phase 2, a Lighting Plan shall be prepared in accordance with the requirements of County Zoning Code Section 4.8.11.K.

The lighting plan shall demonstrate that neither public rights-of-way nor adjacent properties will be significantly illuminated during aggregate mining operations. The lighting plan shall describe site-specific standards including a requirement that a minimum of 90 percent of the light shall be projected downward and within the mining site boundaries. Shielding will be used, as needed, to minimize glare and to minimize light projection into the sky. The direct source of the lighting (bulb, lens, filament, tube, etc) shall not be visible off site and the lighting shall be installed as low as possible on poles and/or structures as to minimize reflected light pollution of the night sky. The candle power of the illumination at ground level and the height and angle of lighting shall not exceed what is required by any safety or security regulations of any government agency with regulatory oversight of the mining operation including, but not limited to, California Department of Industrial Relations, Division of Occupational Health

and Safety, and the United Stated Department of the Labor, Mine Safety and Health Administration. Prior to installation of any permanent lighting structures, the Applicant shall prepare and submit to PER a final Lighting Plan providing the location, type, and lumens of the lighting to be constructed.

4 AIR QUALITY

INTRODUCTION

This chapter addresses the potential air quality impacts associated with the proposed White Rock North Mine project. The analysis in this chapter considers the potential impacts of the project related to air quality.

ENVIRONMENTAL SETTING

The Sacramento Metropolitan Area is a federal ozone non-attainment area and one of the top 25 worst air quality areas nationally[1]. In Sacramento County, pollutants of greatest concern are ozone precursors (hydrocarbons and nitrogen oxides), carbon monoxide (CO), particulate matter (PM_{10} and $PM_{2.5}$), and other visibility-reducing materials.

ATMOSPHERIC CONDITIONS

The geography and weather patterns of the Sacramento Valley are conducive to high air pollution levels. The mountain ranges surrounding the valley are natural air current barriers, which restrict most of the circulating winds of lower elevations from mixing and dispersing air pollutants of the valley. Sacramento is also subject to thermal air inversions, especially during the summer and fall months, wherein a layer of cool air is overlain by warmer air. Also, solar radiation from the abundant sunshine in Sacramento acts as a catalyst to drive chemical reactions between atmospheric pollutants such as reactive hydrocarbons and nitrogen oxides; the result is photochemical smog. Thus, the combination of surrounding mountains, abundant sunshine, thermal air inversions and wind patterns make the Sacramento area susceptible to high levels of air pollution.

EXISTING AIR QUALITY

The Sacramento Federal Nonattainment Area for ozone (SFNA) is comprised of five air districts in the southern portion of the Sacramento air basin. The SFNA air districts include all of Sacramento and Yolo Counties, and portions of El Dorado, Placer, Sutter and Solano Counties (see Plate AQ-1). With the exception of ozone and particulate matter standards, this area is in attainment for all state and national ambient air quality standards (AAQS). However, the SFNA is designated a “severe” nonattainment area for the federal eight-hour AAQS for ozone. As a part of the SFNA, Sacramento County is out of compliance with the state one hour and the federal eight-hour AAQS for ozone.

[1] American Lung Association, 26th Annual “State of the Air.” Released April 23,2025.

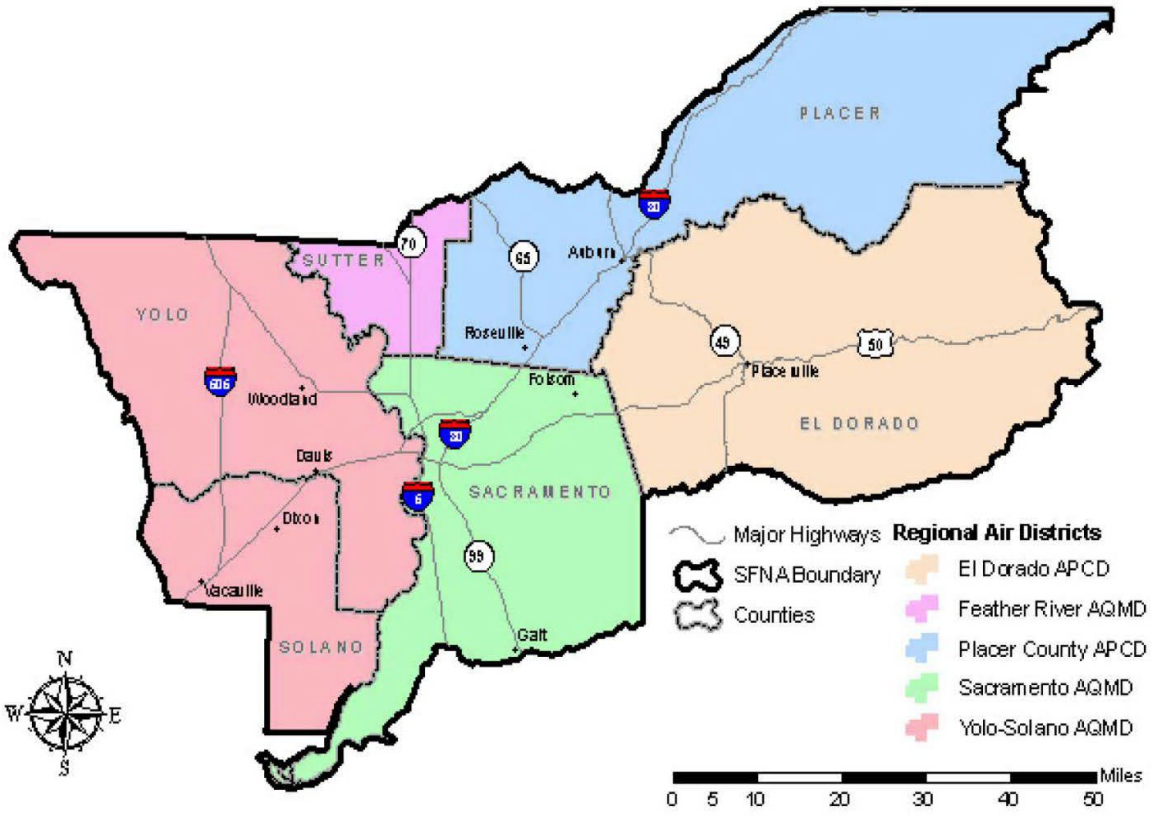
With respect to particulate matter, Sacramento County is designated as nonattainment for the state PM_{10} 24-hour standard and annual mean, the state $PM_{2.5}$ annual standard and the federal $PM_{2.5}$ 24-hour standard.

Ambient air quality standards define clean air. Specifically, federal and state AAQS establish the concentration above which a pollutant is known to cause adverse health effects to sensitive groups within the population, such as children and the elderly.

Because AAQS have been established for specific pollutants using health-based criteria, the pollutants for which standards have been set are known as “criteria” pollutants. For some of the criteria pollutants, the state standards are more stringent than the federal standards. The differences in the standards are due to variations in health studies and interpretations involved in the standard-setting process.

The amount of pollutants released and the atmosphere’s ability to transport and dilute the pollutants affect a given pollutant’s concentration in the atmosphere. Factors affecting transport and dilution include terrain, wind, atmospheric stability, and, for photochemical pollutants, sunlight. Sacramento’s poor air quality can largely be attributed to emissions, geography, and meteorology.

Plate AQ-1: Sacramento Federal Nonattainment Area (SNFA) for Ozone



Source: Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan, December 19, 2008 (revised in 2011, 2013 and 2017). The map in the adopted plan and the proposed revision are identical.

REGULATORY SETTING

FEDERAL, STATE, AND LOCAL AGENCIES

Air quality in Sacramento County is regulated by several agencies, which include the U.S. Environmental Protection Agency (EPA), California Air Resources Board (CARB), and Sacramento Metropolitan Air Quality Management District (SMAQMD). Each of these agencies develops rules and/or regulations to attain the goals or directives imposed upon them through legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent. In general, air quality is evaluated based upon standards developed by federal and state agencies. Mobile sources of air pollutants are largely controlled by federal and state agencies, while local air pollution control districts or air quality management districts (AQMD) regulate stationary sources.

Air pollution problems in Sacramento County are primarily the result of locally generated emissions. However, Sacramento County has been identified as a source of ozone precursor emissions that occasionally contribute to air quality problems in the San Joaquin Valley Air Basin and the Northern Sacramento Valley Air Basin. Consequently, the air quality planning for Sacramento County must not only correct local air pollution problems but must also reduce the impacts from the area on downwind air basins

SACRAMENTO METROPOLITAN AIR QUALITY RULES AND REGULATIONS

SMAQMD regulates air quality in Sacramento County through its permit authority over stationary sources of emissions, through its vehicle and fuels management program, and through planning and review activities. All projects are subject to SMAQMD Rules and Regulations in effect at the time of construction. Several SMAQMD Rules pertinent to the project include: Rule 201 (General Permit Requirements) and Rule 403 (Fugitive Dust).

Rule 201: General Permit Requirements: Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from SMAQMD prior to equipment operation. The applicant, developer or operator of a project that includes an emergency generator, boiler, or heater should contact the District early to determine if a permit is required, and to begin the permit application process. Portable construction equipment (e.g., generator, compressors, pile drivers, lighting equipment, etc.) with an internal combustion engine over 50 horsepower are required to have a SMAQMD permit or a California Air Resources Board (CARB) portable equipment registration.

Rule 401: Ringlemann Chart. A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three minutes in any one hour which is: as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or of such opacity as to obscure a human observer's view, or a certified calibrated in-stack opacity monitoring

system to a degree equal to or greater than does smoke described in Subsection 301.1 of this rule.

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

Rule 403: Fugitive Dust: The developer or contractor is required to control dust emissions from earth moving activities or any other construction activity to prevent airborne dust from leaving the project site.

Rule 404: Particulate Matter. Except as otherwise provided in Rule 406 of this regulation, a person shall not discharge into the atmosphere from any source particulate matter in excess of 0.23 grams per dry standard cubic meter (0.1 grains per dry standard cubic foot).

Rule 405: Dust and Condensed Fumes. A person shall not discharge into the atmosphere in any one hour from any source whatsoever dust or condensed fumes in total quantities in excess of the amount shown in the Rule's Table for Process Weight and Allowable Discharge.

The SMAQMD was created by the state to enforce local, state, and federal air pollution regulations within the Sacramento Valley Air Basin (SVAB). The SMAQMD's overall mission is to achieve clean air goals by leading the Sacramento region in protecting public health and the environment through effective programs, community involvement, and public education. The SMAQMD interacts with local, state, and federal government agencies, the business community, environmental groups, and private citizens to achieve these goals. The SMAQMD regulates air pollutant emissions from stationary sources through permit limitations and inspection programs and oversees compliance with state and federal mandates by adopting rules and regulations as necessary.

Because the SVAB is in nonattainment for ozone, PM_{10}, and $PM_{2.5}$, the SMAQMD requires the implementation of the following Basic Construction Emission Control Practices (BCECPs), regardless of the project's significance determination under CEQA. Since these are already required by existing rules and regulations, it is not necessary to include them as mitigation.

- Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to, soil piles, graded areas, unpaved areas, staging areas, and access roads;

- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered;

- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited;

- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph);

- All roadways, driveways, sidewalks, and parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used;

- Minimize idling time by either shutting equipment off when not in use or reducing time of idling to 5 minutes. Provide clear signage that posts this requirement for workers at the entrances to the site; and

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.

Sacramento County

Local governments, such as Sacramento County, have the authority and responsibility to reduce air pollution through the land use decision-making authority allowed by their police power. Specifically, local governments are responsible for the mitigation of emissions resulting from the land use decisions and for the implementation of transportation resulting from the land use decisions and for the implementation of transportation control measures as outlined in federal, state, and local air quality attainment plans. In general, a first step toward implementation of a local government's responsibility is accomplished by identifying air quality goals, policies, and implementation measures in its General Plan. Through capital improvement programs, local governments can fund infrastructure that contributes to improved air quality, by requiring such improvements as bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, local governments assess air quality impacts, require mitigation of potential air quality impacts by conditioning discretionary permits, and monitor and enforce implementation of such mitigation.

The Sacramento County General Plan includes the following policies that pertain to air quality for the proposed project:

AQ-16: Prohibit the idling of on- and off-road engines when the vehicle is not moving or when the off-road equipment is not performing work for a period of time greater than five minutes in any one-hour period.

AQ-19: Require all feasible reductions in emissions for the operation of construction vehicles and equipment on major land development and roadway construction projects.

POLLUTANTS AND AIR QUALITY STANDARDS

The criteria pollutants of greatest concern are due to construction activities and vehicle emissions. The pollutants from these activities include CO, ozone (O_3), and respirable particulate matter (PM_{10} and $PM_{2.5}$). A summary of state and federal ambient air quality standards for criteria pollutants is shown in Table AQ-1, below.

Table AQ-2 shows the pollutants of concern within Sacramento County and their attainment status with state and federal standards.

CARBON MONOXIDE (CO)

State and federal CO standards have been set for both 1-hour and 8-hour averaging times. The state 1-hour standard is 20 parts per million (ppm) by volume, while the federal 1-hour standard is 35 ppm. Both state and federal standards are 9 ppm for the 8-hour averaging period. CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

PARTICULATE MATTER (PM_{10} & $PM_{2.5}$)

Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Few particles larger than 10 microns in diameter reach the lungs, but the smaller particles have been shown to have the most serious health risks. Consequently, there are federal and state air quality standards for particulate matter 10 microns or less in diameter (PM_{10}) and for particulate matter 2.5 microns or less in diameter ($PM_{2.5}$).

The state PM_{10} standards are 50 micrograms per cubic meter ($\mu g/m^3$) as a 24-hour average and 20 $\mu g/m^3$ as an annual arithmetic mean. The federal PM_{10} standard is 150 $\mu g/m^3$ as a 24-hour average. The $PM_{2.5}$ standard has been set by the state at a concentration of 12 $\mu g/m^3$ as an annual arithmetic mean, and the federal standards are 12 $\mu g/m^3$ as an annual arithmetic mean and 35 $\mu g/m^3$ in a 24-hour period.

Particulate matter conditions in Sacramento County reflect a mix of rural and urban sources, including agricultural activities, industrial emissions, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere.

Table AQ-1: State and Federal Ambient Air Quality Standards

Pollutant	Symbol	Average Time	Standard, as parts per million		Standard, as micrograms per cubic meter		Violation Criteria	
			California	National	California	National	California	National
Ozone	O_3	1 hour	0.09	--	180	--	If exceeded	If exceeded more than 3 days in 3 years
		8 hours	0.070	0.070	137	--	If exceeded	If exceeded more than 3 days in 3 years
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded more than 1 day per year
Nitrogen dioxide	NO_2	Annual arithmetic mean	0.030	0.053	57	100	If exceeded	If exceeded
		1 hour	0.18	0.100	339	188	If exceeded	
Sulfur dioxide	SO_2	24 hours	0.04	0.14	105	--	If exceeded	If exceeded more than 1 day per year
		3 hour	--	0.5	--	1,300	N/A	If exceeded more than 1 day per year
		1 hour	0.25	0.075	655	196	If exceeded	N/A
Hydrogen sulfide	H_2S	1 hour	0.03	--	42	--	If ≥	N/A
Vinyl chloride	C_2H_3Cl	24 hours	0.01	--	26	--	If ≥	N/A
Respirable particulate matter	PM_{10}	Annual arithmetic mean	--	--	20	--	If exceeded	N/A
		24 hours	--	--	50	150	If exceeded	If exceeded more than 1 day per year
Fine particulate matter	$PM_{2.5}$	Annual arithmetic mean	--	--	12	9	If exceeded	If exceeded over 3-year average
		24 hours	--	--	--	35	If exceeded	If exceeded over 3-year average
Sulfate particles	SO_4	24 hours	--	--	25	--	If ≥	N/A
Lead particles	Pb	Calendar Quarter	--	--	--	1.5	N/A	If exceeded more than 1 day per year
		Rolling 3-month average	--	--	--	0.15	If ≥	N/A
		30-day average	--	--	1.5	--	If ≥	N/A

Source: *California Air Resources Board. "Ambient Air Quality Chart". July 16, 2024. Accessed: January 15, 2026* https://ww2.arb.ca.gov/sites/default/files/2024-08/AAQS%20Table_ADA_FINAL_07222024.pdf ***NOTES:*** ***1)*** *All standards are based on measurements at 25 C and 1 atmosphere pressure.* ***2)*** *National standards shown are the primary (health effects) standards.* ***3)*** *N/A = not applicable*

Table AQ-2: Sacramento County Attainment Status

Pollutant	Attainment with State Standards	Attainment with Federal Standards
Ozone	Non-Attainment (1-hour Standard[1] and 8-hour Standard)	Attainment (1-hour Standard[2]) Non-Attainment, Classification = Severe - 15* (8-hour[3] Standards)
Particulate Matter 10 Micron	Non-Attainment (24-hour Standard and Annual Mean)	Attainment (24-hour Standard)
Particulate Matter 2.5 Micron	Attainment (Annual Standard)	Non-Attainment (24-hour Standard) and Attainment (Annual)
Carbon Monoxide	Attainment (1 hour and 8-hour Standards)	Attainment (1-hour and 8-hour Standards)
Nitrogen Dioxide	Attainment (1 hour Standard and Annual)	Unclassified/Attainment (1-hour and Annual)
Sulfur Dioxide[4]	Attainment (1 hour and 24-hour Standards)	Attainment/Unclassifiable[5]
Lead	Attainment (30-day Standard)	Attainment (3-month rolling average)
Visibility Reducing Particles	Unclassified	No Federal Standard
Sulfates	Unclassified (24-hour Standard)	No Federal Standard
Hydrogen Sulfide	Unclassified (1-hour Standard)	No Federal Standard

1. *Per Health and Safety Code (HSC) § 40921.59(c), the classification is based on 1989-1001 data and therefore does not change.*
2. *Air Quality meets the Federal 1-hour Ozone standard (77 FR 64036). EPA revoked this standard, but some associated requirements still apply. The SMAQMD attained the standard in 2009.*
3. *For both that 1997 and the 2008 Standard.*
4. *Cannot be classified.*
5. *Designation was made as part of EPA's designations for the 2010 SO_2 Primary National Ambient Air Quality Standard – Round 3 Designation in December 2017.*

**Designations based on information from http://www.arb.ca.gov/desig/changes.htm#reports*
Source: SMAQMD. "Air Quality Pollutants and Standards". Web. Accessed: April 28, 2022.
http://airquality.org/air- quality-health/air-quality-pollutants-and-standards

OZONE (O_3)

Ozone is not usually emitted directly into the air, but is created at ground level by a chemical reaction between oxides of nitrogen (NO_X) and volatile organic compounds (VOC) in the presence of sunlight. The United States Environmental Protection Agency formerly called VOC reactive organic gases, or ROG – the latter term is still in use in most modeling programs and by the Sacramento Metropolitan Air Quality Management District. For this reason, both the term VOC and ROG may be used; the reader should be aware that these are the same constituents. Because photochemical reaction rates

depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials.

State and federal standards for ozone have been set for an 8-hour averaging time, and the state also has set a standard for a 1-hour averaging time. There is a federal 1-hour standard in existence, but the standard only applies to Early Action Compact Areas, and Sacramento County is not in such an area. The state 8-hour standard is 0.070 ppm (137 $\mu g/m^3$) and the 1-hour standard is 0.09 ppm (180 $\mu g/m^3$). The federal 8-hour standard is 0.070 ppm (137 $\mu g/m^3$).

SIGNIFICANCE CRITERIA AND METHODOLOGY

SIGNIFICANCE CRITERIA

According to the CEQA Appendix G criteria, a project may be deemed to have a significant effect on the environment if it:

1. Conflicts with or obstructs implementation of the applicable air quality plan,
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment,
3. Expose sensitive receptors to substantial pollutant concentrations, or
4. Result in other emissions (e.g., odors) adversely affecting a substantial number of people.

As stated in Appendix G of the CEQA Guidelines, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations. SMAQMD has adopted significance thresholds for CEQA projects within the District. The adopted significance thresholds are shown in Table AQ-3.

Table AQ-3: SMAQMD Significance Thresholds

	ROG[1] (lbs/day)	**NOx (lbs/day)**	**CO ($\mu g/m^3$)**	**PM10 (lbs/day)**	**PM2.5 (lbs/day)**
Construction (short-term)	None	85	CAAQS[2]	80[3]	82[3]
Operational (long-term)	65	65	CAAQS	80[3]	82[3]

1. *Reactive Organic Gas*
2. *California Ambient Air Quality Standards: 20 ppm 1-hour standard ($23mg/m^3$); 9 ppm 8-hour standard ($10mg/m^3$)*
3. *Only applies to projects for which all feasible best available control technology (BACT) and best management practices (BMPs) have been applied. Projects that fail to apply all feasible BACT/BMPs must meet a significance threshold of 0 lbs/day.*

4. *Annual Thresholds are determined for PM_{10} and $PM_{2.5}$, 14.6 tons/year and 15 tons/year, for both construction and operational.*

Additionally, pursuant to the SMAQMD-recommended thresholds for evaluating project-related air quality impacts, the proposed project would result in a significant impact on air quality if it would:

- Generate emissions of toxic air contaminants (TACs) that would cause an excess cancer risk level of more than 10 in one million or exceed a noncarcinogenic[2] Hazard Index of 1; or

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

For cumulative impacts, SMAQMD states that, as a result of the District's approach to thresholds of significance, if a project's emissions are not anticipated to exceed the SMAQMD-recommended thresholds, as listed above, the project would not be expected to result in a cumulatively considerable contribution to a significant impact at a cumulative level (SMAQMD, 2021).

METHODOLOGY

An Air and Greenhouse Gas (GHG) Emissions Study was prepared by Compass Land Group to support the project (Appendix AQ-1). Information contained in this chapter is supported by the analysis contained in the Air and GHG Emission Study.

CONSTRUCTION IMPACT METHODOLOGY

Project construction activity would include grading and paving activities for the site entrance and office areas, installation of a conveyor undercrossing, and installation of the overland conveyor system. These construction improvements are anticipated to occur no earlier than 2026. Table AQ-4 presents a summary of the anticipated project construction schedule and duration. Tasks are listed in the anticipated sequence that they would occur.

Table AQ-4: Anticipated Construction Schedule and Duration

Task	Year	Duration
1. Grading (entrance and office area)	2026	Approximately 2 weeks
2. Paving (entrance)	2026	Approximately 2 weeks
3. Install conveyor undercrossing	2026	Approximately 2 weeks
4. Paving (over conveyor undercrossing)	2026	Approximately 2 days
5. Install overland conveyor	2026	Approximately 2 weeks

[2] Noncarcinogenic or noncancer effects are those effects other than cancer, such as emphysema or reproductive disorders that can be associated with substantial pollutant concentrations.

For evaluation of construction emissions, the California Emissions Estimator Model ("CalEEMod") was used, version 2020.4.0. CalEEMod incorporates state and locally approved emission factors and methodologies for estimating both the daily and maximum and annual average emissions levels for criteria pollutants and GHG emissions associated with land development projects, including mining. The following CalEEMod model selection parameters were used:

1. **Project Location**: Location is set to the County level for Sacramento County. This sets windspeed and precipitation frequency assumptions for modeling. The project site is located within the jurisdiction of the SMAQMD and part of the SVAB (Basin). The Basin is currently designated as nonattainment area for State and National ozone and particulate matter ambient air quality standards.

2. **Lot Acreage**: The project construction activities would occur on ±10 acres of Aerojet property, comprising the site entrance and office areas.

3. **Urbanization**: The land use setting for the purposes of modeling is designated as urban given proximity to urban development and other approved development projects.

4. **Climate Zone**: The site is located within Climate Zone 6 based on the site's zip code.

5. **Equipment**: The applicant provided construction assumptions, such as construction task, equipment type, horsepower ratings, and work duration, for use in emissions modeling.

These construction equipment assumptions are included in Appendix A-1 of the Air and GHG Emissions Study report. CalEEMod Modeling Assumptions are included in Appendix A-2 of the Air and Greenhouse Gas Emissions Study (Appendix AQ-1). Equipment load factors were obtained from data provided by CARB.

6. **On-Model Mitigations**: The "mitigated construction" results (as reported in the modeling outputs) assume that disturbed surfaces would be wetted at least two times per day for dust control. The applicant plans to employ a full-time water truck; therefore, this assumption is likely conservative. Mitigation also includes limiting vehicle speeds on unpaved roads to 15 mph. These mitigations are required to meet SMAQMD's BCECP. No other on-model mitigations have been applied in CalEEMod. The "mitigated construction" results are present in the emissions summary below.

Operational Impact Methodology

Project operational activity would include mining to reclamation contours and transport of mined materials by a combination of truck (for internal transport to conveyor) and conveyor. The emissions evaluation for mining operations also includes electricity consumption and particulate matter emissions associated with the use of overland conveyors.

For evaluation of operational emissions, the analysis primarily relied upon CalEEMod for mining related emissions and EPA AP-42 emissions factors for conveyor related particulate matter emissions.

Mining related operational emissions are primarily modeled using the CalEEMod Construction modules, which are setup to better address conventional site grading and earthmoving activities typical of sand and gravel mining. Project emissions are modeled using the most likely equipment intensive mining method (i.e., mining with two excavators that load six haul trucks that feed an overland conveyor, supported by a motor grader, bulldozer, and water truck). The project may also use an alternative method of mining involving two front-end loaders directly feeding an overland conveyor, supported by a motor grader, bulldozer, and water truck. Modeling in this scenario is not necessary as it is less likely to occur, significantly less equipment intensive and would generate substantially less emissions than modeled CEQA worst case scenario. The CalEEMod model run accounts for the operation of excavation equipment, offroad haul truck (to feed a conveyor) and water truck (for dust control). The particulate matter emissions associated with truck and conveyor transport, and GHG emissions associated with conveyor transport, are modeled separately outside of CalEEMod. Details for off-model emissions calculations are included in Appendix B of the report (Appendix AQ-1). The following CalEEMod model selection parameters were used for the evaluation of mining related emissions:

1. **Project Location, Urbanization, and Climate Zone**: Same for the project construction model as described above.

2. **Lot Acreage**: The project would involve mining on ± 2,125 acres of Aerojet property. For mining (grading) activity, this model input parameter has a negligible impact on modeled emissions outputs because the model uses more refined acreage assumptions for graded areas as applicable to each construction phase.

3. **Production**: The emissions analyses are based on the maximum anticipated production proposed for the project, which would involve mining and transport of up to 3,000,000 tons per year of sand and gravel.

4. **Equipment**: Operational equipment assumptions, such as equipment type, horsepower ratings, and work duration, for use in emissions modeling are included in Appendix B-1 of the Air and GHG Emissions Study, Equipment Inputs – Mining Operations and Plant Support. Equipment load factors were obtained from data provided by the CARB.

5. **Energy Use**: Operational energy use was modeled separately outside of CalEEMod.

6. **On-Model Mitigations**: The “mitigated construction” results (as reported in the modeling outputs) assume that disturbed surfaces would be wetted at least two times per day for dust control. The applicant plans to employ a full-time water

truck; therefore, this assumption is likely conservative. Mitigation also includes limiting vehicle speeds on unpaved roads to 15 mph. These mitigations are required to meet SMAQMDs BCECPs. No other on-model mitigations have been applied in CalEEMod. The "mitigated construction" results are presented in the emissions summary below.

7. **Trips and Vehicle Miles Traveled (VMT):** Emissions and VMT associated with on-road (off-site) worker trips accounted for in the model.

The project mining emissions are modeled for the first five years of the proposed 20 year mine life to evaluate the maximum annual emissions since the emission factors and resulting emissions would improve over time. Project emissions are modeled using the CalEEMod construction emissions modules (rather than operational emissions modules), because they are setup to better address conventional site grading and earthmoving activities typical of sand and gravel mining. However, project emissions are still evaluated against applicable operational thresholds established by the SMAQMD. The "operational year" in the CalEEMod model is set to 2028 (one model year after the final year of the construction module, 2027) to ensure proper model functionality. Using the outputs of the CalEEMod model runs, the highest pollutant-generating years for each pollutant are selected for reporting of emissions and comparison of the project's emissions to SMAQMD's thresholds of significance. For daily results, modeled emissions are reported as the higher of the winter or summer daily results summary.

Issues Not Discussed Further

All issues identified in the significance criteria are evaluated below.

Mobile-Source CO Concentrations

The project would use an electric conveyor belt system to transport mined material off the project site, and would thus avoid pollutant emissions related to off-site haul trucks. Additionally, the proposed project would utilize approximately twelve employees, resulting in negligible vehicle trips to the project site and associated emissions above existing conditions. Thus, implementation of the proposed project would not have the potential to increase traffic volumes at affected intersections to greater that 44,000 vehicles per hour. The proposed project's contribution to cumulative CO impacts would not be cumulatively considerable. The overall cumulative impact would be ***less than significant***.

Impacts And Analysis

In the following section, impacts of the proposed project related to air quality are discussed. As provided above, these determinations are based on the criteria identified by the SMAQMD and the air quality analysis provided in Appendix AQ-1. The results of air quality modeling are described, and a determination of significance is made.

Impact AQ-1: Conflict With or Obstruct Implementation of an Applicable Air Quality Plan

The CARB is the lead agency for developing the SIPs in California. SIPs are not single documents. They are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. Many of California's SIPs rely on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB forwards SIP revisions to the EPA for approval and publication in the Federal Register. Most recently, in September 2022, CARB adopted the 2022 State Strategy for the State Implementation Plan (State SIP Strategy) describing the proposed commitment to achieve the reductions necessary from mobile sources, fuels, and consumer products to meet federal ozone and $PM_{2.5}$ standards by the specified attainment years.

Mining equipment and operation are included in the Sacramento Metropolitan Air Quality Management District (SMAQMD) emission assumptions to determine compliance with the SIP. The project would result in an increase in criteria pollutant and ozone precursor emissions in the form of both fugitive dust from ground disturbance, travel on unpaved roads, material transport on conveyors, and exhaust emissions from mining equipment and haul trucks. The project would be required to comply with SMAQMD rules and regulations established, in part, to ensure implementation of and consistency with strategies and actions of the applicable air quality plans, including but not limited to Rule 401, Rule 402, Rule 403, Rule 04, and Rule 405. In addition, the project would be required to implement best management practices for PM.

Given that mining emissions are accounted for in the SIP and that the project would be required to apply all feasible mitigation to reduce emissions, the project would not conflict or obstruct the implementation of an air quality plan. Impacts are ***less than significant.***

Impact AQ-2: Increase of any Criteria Pollutant for Which the Project Region is Non-Attainment

Criteria Air Pollutant Evaluation – Construction

Project construction activity would include grading and paving activities for the site entrance and office areas, installation of a conveyor undercrossing, and installation of the overland conveyor system. Table AQ-5 presents the project's construction-related criteria air pollutants and ozone precursor emissions analysis in comparison to SMAQMD mass emissions thresholds. Using best emissions control practices as required by SMAQMD, the modeling results indicate that all project construction criteria pollutant emissions are below applicable SMAQMD thresholds of significance for CEQA. Based on this analysis the project's construction-related NOx, PM_{10}, and $PM_{2.5}$ emissions would be ***less than significant.***

Table AQ-5: Construction Related Criteria Air Pollutants Emissions Analysis

Year	NOx (lbs/day)	PM_{10} (lbs/day)	PM_{10} (tons/year)	$PM_{2.5}$ (lbs/day)	$PM_{2.5}$ (tons/year)
2023	51.6	55.0	2.7	6.0	0.3
SMAQMD Threshold[1]	85	80	14.6	82	15
Exceeds Threshold (Yes/No)?	No	No	No	No	No

1. *SMAQMD numeric thresholds from Table AQ-3, above. PM thresholds are zero (0), if all feasible BACT/BMPs are applied, then the numeric thresholds apply.*

CRITERIA AIR POLLUTANT EVALUATION – OPERATIONAL

Project operational activity would include mining to reclamation contours and transport of mined materials by a combination of truck and conveyor. Table AQ-6 presents the project's operational related criteria air pollutants and ozone precursor emissions analysis in comparison to SMAQMD mass emissions thresholds. The modeling results indicate that the project's operational related NOx, ROG, and $PM_{2.5}$ emissions would be ***less-than-significant***, without mitigation. Modeling further shows that operational-related PM_{10} emissions (largely associated with dust emissions) would be ***potentially significant*** and require mitigation. Mitigation measures AQ-1 and AQ-2 below are recommended by the SMAQMD for construction-related mitigation. These mitigations are appropriate for the project because mining activities are similar to construction grading activities and benefit from similar emission reduction measures. Additional mitigation for exhaust emissions are feasible to implement and will incrementally reduce emissions. Therefore, Mitigation Measure AQ-3 is recommended. However, even with mitigation operational related PM_{10} would be ***significant and unavoidable.***

Table AQ-6: Operational Related Criteria Air Pollutants Emissions Analysis

Emissions Category	NOx (lbs/day)	ROG (lbs/day)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (lbs/day)	PM2.5 (tons/year)
Mining Operations	47.7	6.4	171.2	21.1	19.5	2.4
SMAQMD Threshold	65	65	80	14.6	82	15
Exceeds Threshold (Yes/No)?	No	No	Yes	Yes	No	No

Notes:

1. *SMAQMD numerical thresholds from Table AQ-3, above. PM thresholds are zero (0); if all feasible BACT/BMPs are applied, then the numeric thresholds apply.*
2. *Applicant will be required to implement feasible BACT/BMPs. Mining operations modeling results reflect the use of a water truck and limiting vehicle speeds on unpaved roads to 15 miles per hour.*
3. *Detailed emissions estimates are provided in Appendix AQ-1.*

IMPACT AQ-3: EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS

DIESEL PARTICULATE MATTER

Particulate exhaust emissions from diesel-fueled engines such as diesel PM were identified as a TAC by CARB in 1998. The dose to which receptors are exposed is the primary factor used to determine health risks. The dose is a function of the concentrations of a substance or substances in the environment and the duration of exposure to the substance. The dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for any exposed receptor. SMAQMD and the County have not established a quantitative threshold of significance for construction-related TAC emissions. Therefore, SMAQMD recommends that lead agencies address this issue on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and its proximity to off-site receptors.

SMAQMD recommends that CEQA documents analyze potential impacts resulting from exposure of sensitive receptors to high doses of TACs and associated health risk for the circumstances/situations described below. Factors that influence TAC-related impacts as it relates to construction activities of the proposed project include:

- **Types of off-site receptors and their proximity to construction activity**: Currently, there are no houses that would be within 2,700 feet of the project site. However, the project is adjacent to the Glenborough at Easton Master Plan. Depending on the timing of development of Glenborough and where mining will occur distances could be smaller. Construction activity would not take place over the entirety of the project site for the duration of the permit timeframe. Mining activities would occur in phases, for shortened durations of time across the project site. By phasing construction and location of mining can change the proximity of these activities with houses.

- **Duration of construction period**: The requested Special Planning Area Implementation Permit (mining) and Use permit (conveyor connection and undercrossing) are for a twenty-year timeframe.

- **Quantity and types of diesel-powered equipment**: The conservative estimates in the air quality analysis assumed the simultaneous use of hydraulic excavators, bulldozers, motor grader, haul trucks, and water truck for aggregate extraction (see Appendix AQ-1).

- **Number of hours equipment would be operated each day**: Mining equipment would be utilized during standard operating hours, and the applicant has requested nighttime operations (which would consist of loading and haul out) for up to 170 nights per year.

- **Location of equipment staging area**: Staging areas would be located within the mining area where active mining would occur.

- **Predominant wind direction**: Wind direction in this area of the unincorporated County is variable depending on the time of day, season and weather conditions. Wind direction is not a factor that would result in any particular sensitive receptor being at a higher risk than others in the project vicinity.

- **Amount of on-site diesel-generated PM exhaust if mass emission levels from construction activity are estimated**: Diesel PM emissions were estimated in impact evaluation AQ-2 above. The estimated PM emissions for the project as a whole are outlined in Table AQ-6 and are well below the SMAQMD mass emissions thresholds for $PM_{2.5}$.

Mining activities will result in project generated emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment for excavation, hauling and other miscellaneous activities. Based on the emission modeling conducted and presented in Table AQ-6 above, the maximum total daily emissions of $PM_{2.5}$ would be 19.5 pounds per day. However, $PM_{2.5}$ from diesel exhaust represents only a small fraction of the total $PM_{2.5}$ with the remainder being the finer fractions of fugitive dust. Per Appendix B-3 of the project air study, the maximum daily exhaust emissions of $PM_{2.5}$ which is considered a surrogate for diesel PM, will be 1.6 pounds per day. This is well below the SMAQMD threshold of significance with all feasible Best Available Control Technology (BACT) and BMPs of 82 pounds per day for $PM_{2.5}$.

The risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic air contaminant emissions, should be on a 30-year exposure period. However, such assessments should be limited to the period / duration of activities associated with the project.

The analysis criteria above indicate that the exposure probability for this project would be low, given the limited amount of PM emissions resulting from the emissions modeling, and the fact the project would take place over a limited, 20-year timeframe. Given the highly dispersive properties of diesel PM and the lack of houses adjacent to the project site, it is not anticipated that mining related TAC emissions would expose, off-site sensitive receptors to an incremental increase in cancer, chronic, and acute risk that exceeds applicable thresholds. Therefore, the project's impact to sensitive receptors from pollutants would be ***less than significant***.

Criteria Pollutant Health Risks

All criteria air pollutants can have human health effects at certain concentrations. Air districts develop region-specific CEQA thresholds of significance in consideration of existing air quality concentrations and attainment designations under the national ambient air quality standards (NAAQS) and California ambient air quality standards

(CAAQS). The NAAQS and CAAQS are informed by a wide range of scientific evidence, which demonstrates that there are known safe concentrations of criteria air pollutants.

Because the NAAQS and CAAQS are based on maximum pollutant levels in outdoor air that would not harm the public's health, and air district thresholds pertain to attainment of these standards, the thresholds established by air districts are also protective of human health. Sacramento County is currently in nonattainment of the NAAQS and CAAQS for ozone. Projects that emit criteria air pollutants in exceedance of SMAQMD's thresholds would contribute to the regional degradation of air quality that could result in adverse human health impacts.

Acute health effects of ozone exposure include increased respiratory and pulmonary resistance, cough, pain, shortness of breath, and lung inflammation. Chronic health effects include permeability of respiratory epithelia and the possibility of permanent lung impairment (EPA, 2016).

HEALTH EFFECTS SCREENING

In order to estimate the potential health risks that could result from the operational emissions of ROG, NO_X, and $PM_{2.5}$, the Office of Planning and Environmental Review (PER) staff implemented the procedures within SMAQMD's Instructions for the Sacramento Metropolitan Air District Minor Project and Strategic Area Project Health Effects Screening Tools (SMAQMD's Instructions). To date, SMAQMD has published three options for analyzing projects: small projects may use the Minor Project Health Screening Tool, while larger projects may use the Strategic Area Project Health Screening Tool, and practitioners have the option to conduct project-specific modeling.

Both the Minor Project Health Screening Tool and Strategic Area Project Health Screening Tool are based on the maximum thresholds of significance adopted within the five air district regions contemplated within SMAQMD's Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sacramento Metropolitan Air District (SMAQMD's Friant Guidance, 2020). The air district thresholds considered in SMAQMD's Friant Guidance included thresholds from SMAQMD as well as the El Dorado County Air Quality Management District, the Feather River Air Quality Management District, the Placer County Air Pollution Control District, and the Yolo Solano Air Quality Management District. The highest allowable rates of ROG, NO_X, PM_{10} and $PM_{2.5}$ from five air districts is 82 pounds per day (lbs/day) for all four pollutants. Thus, the Minor Project Health Screening Tool is intended for use by projects that would result in emissions at or below 82 lbs/day, while the Strategic Area Project Health Screening Tool is intended for use by projects that would result in emissions between two and eight times greater than 82 lbs/day. The Strategic Area Project Health Screening Tool Model was prepared by SMAQMD for five locations throughout the Sacramento region for two scenarios: two times and eight times the threshold of significance level (2xTOS and 8xTOS). The corresponding emissions levels included in the model for 2xTOS were 164 lbs/day for ROG and NO_X, and 656 lbs/day under the 8xTOS for ROG and NO_X (SMAQMD, 2020).

As noted in SMAQMD's Friant Guidance, "each model generates conservative estimates of health effects, for two reasons: The tools' outputs are based on the simulation of a full year of exposure at the maximum daily average of the increases in air pollution concentration… [and] [t]he health effects are calculated for emissions levels that are very high" (SMAQMD, 2020).

The model derives the estimated health risk associated with operation of the project based on increases in concentrations of ozone and $PM_{2.5}$ that were estimated using a photochemical grid model (PGM). The concentration estimates of the PGM are then applied to the EPA Agency's Benefits Mapping and Analysis Program (BenMAP) to estimate the resulting health effects from concentration increases. PGMs and BenMAP were developed to assess air pollution and human health impacts over large areas and populations that far exceed the area of an average land use development project. These models were never designed to determine whether emissions generated by an individual development project would affect community health or the date an air basin would attain an ambient air quality standard. Rather, they are used to help inform regional planning strategies based on cumulative changes in emissions within an air basin or larger geography.

It must be cautioned that within the typical project-level scope of CEQA analyses, PGMs are unable to provide precise, spatially defined pollutant data at a local scale. In addition, as noted in SMAQMD's Friant Guidance, "BenMAP estimates potential health effects from a change in air pollutant concentrations, but does not fully account for other factors affecting health such as access to medical care, genetics, income levels, behavior choices such as diet and exercise, and underlying health conditions" (2020).

Thus, the modeling conducted for the health risk analysis is based on imprecise mapping and only takes into account one of the main public health determinants (i.e., environmental influences).

DISCUSSION OF PROJECT IMPACTS: CRITERIA POLLUTANT HEALTH RISKS

Since the project has negligible operational emissions, the Minor Project Health Screening Tool was used to estimate health risks. The results are shown in Table AQ-7 and Table AQ-8.

Table AQ-7: PM2.5 Health Risk Estimates

$PM_{2.5}$ Health Endpoint	Age Range [1]	Incidences Across the Reduced Sacramento 4-km Modeling Domain Resulting from Project Emissions (per year)[2,5]	Incidences Across the 5-Air-District Region Resulting from Project Emissions (per year)[2]	Percent of Background Health Incidences Across the 5-Air-District Region[3]	Total Number of Health Incidences Across the 5-Air-District Region (per year)[4]
		(Mean)	(Mean)		
Respiratory					
Emergency Room Visits, Asthma	0 - 99	0.75	0.68	0.0037%	18419
Hospital Admissions, Asthma	0 - 64	0.047	0.043	0.0023%	1846
Hospital Admissions, All Respiratory	65 - 99	0.31	0.28	0.0014%	19644
Cardiovascular					
Hospital Admissions, All Cardiovascular (less Myocardial Infarctions)	65 - 99	0.17	0.15	0.00063%	24037
Acute Myocardial Infarction, Nonfatal	18 - 24	0.000061	0.000054	0.0014%	4
Acute Myocardial Infarction, Nonfatal	25 - 44	0.0052	0.0046	0.0015%	308
Acute Myocardial Infarction, Nonfatal	45 - 54	0.014	0.013	0.0018%	741
Acute Myocardial Infarction, Nonfatal	55 - 64	0.023	0.022	0.0018%	1239
Acute Myocardial Infarction, Nonfatal	65 - 99	0.10	0.096	0.0019%	5052
Mortality					
Mortality, All Cause	30 - 99	2.1	1.9	0.0042%	44766

Notes:

1. *Affected age ranges are shown. Other age ranges are available, but the endpoints and age ranges shown here are the ones used by the USEPA in their health assessments. The age ranges are consistent with the epidemiological study that is the basis of the health function.*

2. *Health effects are shown in terms of incidences of each health endpoint and how it compares to the base (2035 base year health effect incidences, or "background health incidence") values. Health effects are shown for the Reduced Sacramento 4-km Modeling Domain and the 5-Air- District Region.*
3. *The percent of background health incidence uses the mean incidence. The background health incidence is an estimate of the average number of people that are affected by the health endpoint in a given population over a given period of time. In this case, the background incidence rates cover the 5-Air-District Region (estimated 2035 population of 3,271,451 persons). Health incidence rates and other health data are typically collected by the government as well as the World Health Organization. The background incidence rates used here are obtained from BenMAP.*
4. *The total number of health incidences across the 5-Air-District Region is calculated based on the modeling data. The information is presented to assist in providing overall health context.*
5. *The technical specifications and map for the Reduced Sacramento 4-km Modeling Domain are included in Appendix A, Table A-1 and Appendix B, Figure B-2 of the* Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District.

Table AQ-8: Ozone Health Risk Estimates

Ozone Health Endpoint	Age Range[1]	Incidences Across the Reduced Sacramento 4-km Modeling Domain Resulting from Project Emissions (per year)[2,5]	Incidences Across the 5-Air- District Region Resulting from Project Emissions (per year)[2]	Percent of Background Health Incidences Across the 5-Air- District Region[3]	Total Number of Health Incidences Across the 5-Air-District Region (per year)[4]
		(Mean)	(Mean)		
Respiratory					
Hospital Admissions, All Respiratory	65 - 99	0.074	0.059	0.00030%	19644
Emergency Room Visits, Asthma	0 - 17	0.26	0.21	0.0036%	5859
Emergency Room Visits, Asthma	18 - 99	0.46	0.38	0.0030%	12560
Mortality					
Mortality, Non-Accidental	0 - 99	0.047	0.040	0.00013%	30386

Notes:

1. *Affected age ranges are shown. Other age ranges are available, but the endpoints and age ranges shown here are the ones used by the USEPA in their health assessments. The age ranges are consistent with the epidemiological study that is the basis of the health function.*
2. *Health effects are shown in terms of incidences of each health endpoint and how it compares to the base (2035 base year health effect incidences, or "background health incidence") values. Health effects are shown for the Reduced Sacramento 4-km Modeling Domain and the 5-Air-District Region.*
3. *The percent of background health incidence uses the mean incidence. The background health incidence is an estimate of the average number of people that are affected by the health endpoint in a given population over a given period of time. In this case, the background incidence rates cover the 5-Air-District Region (estimated 2035 population of 3,271,451 persons). Health incidence rates and other health data are typically collected by the government as well as the World Health Organization. The background incidence rates used here are obtained from BenMAP.*
4. *The total number of health incidences across the 5-Air-District Region is calculated based on the modeling data. The information is presented to assist in providing overall health context.*

5. *The technical specifications and map for the Reduced Sacramento 4-km Modeling Domain are included in Appendix A, Table A-1 and Appendix B, Figure B-2 of the* Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District.

Again, it is important to note that the "model outputs are derived from the numbers of people who would be affected by [the] project due to their geographic proximity and based on average population through the Five-District-Region. The models do not take into account population subgroups with greater vulnerabilities to air pollution, except for ages for certain endpoints" (SMAQMD, 2020). Therefore, it would be misleading to correlate the levels of criteria air pollutant and precursor emissions associated with project implementation to specific health outcomes. While the effects noted above could manifest in individuals, actual effects depend on factors specific to each individual, including life stage (e.g., older adults are more sensitive), preexisting cardiovascular or respiratory diseases, and genetic polymorphisms. Even if this specific medical information was known about each individual, there are wide ranges of potential outcomes from exposure to ozone precursors and particulates, from no effect to the effects listed in the tables. Ultimately, the health effects associated with the project, using the SMAQMD guidance "are conservatively estimated, and the actual effects may be zero" (SMAQMD, 2020).

Mining activities will result in temporary project generated emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment for excavation, hauling and other miscellaneous activities. The entitlement request would result in 20 years of mining, in which operations would transition through the project site in three phases, only impacting one phase at any given time. Based on the emission modeling conducted for the project, the maximum daily exhaust emission of $PM_{2.5}$ are 19.6 pounds per day. This is well below the SMAQMD threshold of significance with all feasible BACT and BMPs of 80 pounds per day for $PM_{2.5}$.

The risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic air contaminant emissions, should be based on a 30-year exposure period (OEHAA, 2015). However, such assessments should be limited to the period/duration of activities associated with the project. The project area is not currently located in close proximity to sensitive land uses. The nearest existing sensitive land uses consist of residential developments approximately 9,000 feet to the south and 3,800 feet to the north. Development of residential uses of the Regency project is currently occurring in in the City of Folsom's Folsom Ranch, approximately 4,500 feet to the east of the project site. The Glenborough site is located approximately 50 feet from the northern project boundary. Residential uses are planned along the adjacent boundary, but at this time, subdivision maps have not been approved and there is no timeline for development.

The analysis criteria above indicate that the exposure probability for this project would be low, given the limited amount of PM emissions resulting in the emissions modeling, and the fact the project would take place over a limited timeframe. Exposure to sensitive

receptors would only occur in the event residential development occurs adjacent to the project site during the timeframe of the project. Studies show that diesel PM is highly dispersive, for example, diesel PM emissions dissipate by 70 percent at 500 feet from the source (CARB 2005). Given the highly dispersive properties of diesel PM, which emissions are estimated to be 19.6 lbs/day and well below the adopted mass emissions thresholds for PM2.5, it is not anticipated that mining related TAC emissions would expose nearby, off-site sensitive receptors to a significant incremental increase in cancer, chronic, and acute risk. Therefore, the project's impacts to sensitive receptors from criteria pollutants would be ***less than significant***.

IMPACT AQ-4: RESULTS IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE

Any project with the potential to create objectionable odors affecting a substantial number of people would be considered to have a significant impact as suggested in CEQA Guidelines Appendix G. In addition, the SMAQMD's Rule 402 prohibits any person or source from emitting air contaminants that cause detriment, nuisance, or annoyance to a considerable number of persons or the public. The adverse effects of odors on residential areas and other sensitive receptors, such as hospitals, day-care centers, and schools warrant the closest scrutiny; but consideration should also be given to other land use types where people congregate, such as recreational facilities, worksites, and commercial areas. The occurrence and severity of odor impacts depends on numerous factors, including the nature of the odor source, distance between the receptor and odor source, and local meteorological conditions. While offensive odors rarely cause any physical harm, they still can be unpleasant, leading to distress among the public and sometimes generating citizen complaints to local government.

Regarding the nature of the odor sources, the project has the potential to generate odors associated with construction and mining operations. The SMAQMD has published screening distances as a supplement to its CEQA Guide to qualitatively assess a variety of land uses that typically generate odors, such as wastewater treatment plants, landfills, composting facilities, and asphalt batch plants. The project activities do not fall under any of the land use categories for which screening distances are provided.

Construction and mining activities could result in odorous diesel exhaust emissions from the use of off-road equipment and trucks. These types of odorous emissions, however, would be temporary and would not be generated at any one location for an extended period because the equipment and trucks will be moving around the mine site. Further, diesel exhaust dissipates rapidly from the source with an increase in distance and has limited potential to affect a substantial number of nearby receptors. For these reasons, the project's odor impacts are considered ***less than significant***.

Mitigation Measures

Mitigation Measure AQ-1 – Basic Construction Emissions Control Practices

The project shall implement the SMAQMD Basic Construction Emission Control Practices (BMPs), including:

a. Control of fugitive dust is required by District Rule 403 and enforced by District staff.

b. Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.

c. Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.

d. Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited

e. Limit vehicle speeds on unpaved roads to 15 mph.

f. All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

g. Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.

h. Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulations [California Code of Regulations, Title 13, sections 2449 and 2449.1].

i. Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

Mitigation Measure AQ-2 – Enhanced Fugitive PM Dust Control Practices

The project shall implement the SMAQMD's Enhanced Fugitive PM Dust Control Practices, which include:

a. For soil disturbance areas:

i. Water exposed soil with adequate frequency for continued moist soil. However, do not overwater to the extent that sediment flows off the site.

ii. Suspend excavation, grading, and/or demolition activity when wind speeds exceed 20 mph.

iii. Install wind breaks (e.g., plant trees, solid fencing) on windward side(s) of construction areas.

iv. Plant vegetative ground cover (fast-germinating native grass seed) in disturbed areas as soon as possible. Water appropriately until vegetation is established.

b. For unpaved roads:

i. Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site.

ii. Treat site accesses to a distance of 100 feet from the paved road with a 6 to 12-inch layer of wood chips, mulch, or gravel to reduce generation of road dust and road dust carryout onto public roads.

iii. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of the District shall also be visible to ensure compliance.

MITIGATION MEASURE AQ-3 – ENHANCED ON-SITE EXHAUST CONTROLS

The project shall implement the SMAQMD's Enhanced On-Site Exhaust Controls (with annual reporting, appropriate for mining projects) as follows:

The project applicant, or its designee, shall provide a plan for approval by the SMAQMD that demonstrates the heavy-duty off-road vehicles (50 horsepower or more) to be used 8 hours or more during the mining project will achieve a project-wide fleet average of 10% NO_X reduction compared to the CARB fleet average for the calendar year the mining activity will occur. [Acceptable options for reducing emissions may include use of cleaner engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and / or other options as they become available.] The plan shall have three components: an initial report submitted before mining activities begin, annual reports of actual equipment usage, and then a final report when the project has concluded.

- Submit the initial report at least four (4) business days prior to the start of mining activity using the Sac Metro Air District's Construction Mitigation Tool (http://www.airquality.org/businesses/ceqa-land-use-planning/mitigation).

- Provide project and company information.

- Include the equipment type, horsepower rating, engine model year, projected hours of use, and the CARB equipment identification number for each piece of equipment in the plan. Incorporate all owned, leased and subcontracted equipment to be used.

- Submit the annual report of the previous calendar year activity by March 1st.

- Submit the final report at the end of the project, as pre-arranged with Sac Metro Air District staff and documented in the approval letter, to demonstrate continued project compliance.

The SMAQMD may conduct periodic site inspections to determine compliance. Nothing in this mitigation shall supersede other air district, state or federal rules or regulations.

5 BIOLOGICAL RESOURCES

INTRODUCTION

This chapter addresses potential impacts to biological resources associated with the proposed White Rock North Mine project (proposed project). The analysis focuses on impacts to riparian habitat, annual grasslands, wetland habitat and jurisdictional waters and the special status species that rely on these habitats. Species covered in this document include a variety of special status plants, fish, amphibians, reptiles, birds and mammals such as Sanford's arrowhead (*Sagittaria sanfordii*), western spadefoot toad (*Spea hammondii*), giant garter snake (*Thamnophis gigas*), Swainson's hawk (*Buteo swainsoni*), and western red bat (*Lasiurus frantzii*). The description of biological resources information and analysis presented in this section is based on the project-specific Biological Resources Assessment Report prepared by ECORP Consulting Inc. (ECORP) (Appendix BR-1), from which data were verified by ECORP; in some cases, acreages were re-calculated as needed to support the independent analysis in this document.

ENVIRONMENTAL SETTING

The project site consists of approximately 2,136 ± acres and an off-site conveyor connection. The project site is located south of Aerojet Road, north of White Rock Road, east of Nimbus Road, and west of Utah Avenue. The topography of the project site has flat to gently rolling terrain, elevations ranging from 190 to 324 feet above mean sea level.

The vast majority of the project site consists of undeveloped lands that were historically dredged for gold. The tailing from the mining operation created a complex landscape of linear cobble piles, or dredge tailings, up to approximately 40 feet tall interspersed with ravines and basins. Scattered throughout the dredge tailings landscape are the testing facilities for Aerojet.

According to the Web soil Survey (NRCS, 2021a), five soil units have been mapped within the project site:

- 125 – Corning complex, 0 to 8 percent slopes;
- 192 – Red Bluff loam, 2 to 5 percent slopes;
- 198 – Redding gravelly loam, 0 to 8 percent slopes;
- 223 – Slickens; and
- 245 – Xerorthents, dredge tailings, 2 to 50 percent slopes.

The soil units mapped within the project site are considered hydric, and suitable to support wetlands when occurring in swales, depressions, slickens and floodplains. Additional discussion of the project site's climate, soils, and hydrology are provided in Chapter 11, Geology and Soils, and Chapter 13, Hydrology and Water Quality.

Vegetation and Land Cover Types

Vegetation communities were identified within the project site based on the classification system presented in the Manual of California Vegetation (Sawyer et al., 2009). Vegetation communities identified within the project site include coyote brush scrub, Fremont cottonwood forest, mixed oak forest, interior live oak woodland, blue oak woodland, sandbar willow thickets, and arroyo willow thickets. In addition to these vegetation communities, several non-vegetative, disturbed, or non-native dominated vegetation and land cover types are also present within the project site and do not strictly follow the Manual of California Vegetation's nomenclature. These include developed areas, open water features, annual grasslands, and dredge tailings. Table BR-1 summarizes the area of each biological community type in the project area, which are discussed further in the following sections. Landcover types are summarized in Table BR-1 and also in Plate BR-1, Plate BR-2, Plate BR-3, and Plate BR-4.

Table BR-1: Summary of Biological Communities in the Project Area

Community Type	Area (acres)
Annual grasslands	85.0
Arroyo Willow Thickets	33.4
Blue Oak Woodland	16.8
Coyote Brush Scrub	246.1
Developed	190.1
Dredge Tailings	1,218.9
Fremont Cottonwood Forest	172.8
Interior Live Oak Woodland	95.6
Mixed Oak Forest	27.0
Open Water	9.3
Sandbar Willow Thickets	43.6
Total:	2,138.6

Note: The project boundary and acreage were refined following ECORP Consulting, Inc. Biological Resources Assessment, resulting in a total acreage of 2,136.

The following sections describe the vegetation communities and land cover types identified in the project site. These descriptions include thresholds of absolute and relative cover, as presented in the Manual of California Vegetation, which were used to define vegetation community types within the project site. Absolute cover is defined as the percentage of the ground covered by a plant species as seen from above. Relative cover is defined as the cover of a species in relation to other species within a defined area or layer of vegetation (Sawyer et al., 2009).

Plate BR-1: Vegetation Communities and Land Cover Types (1 of 4)

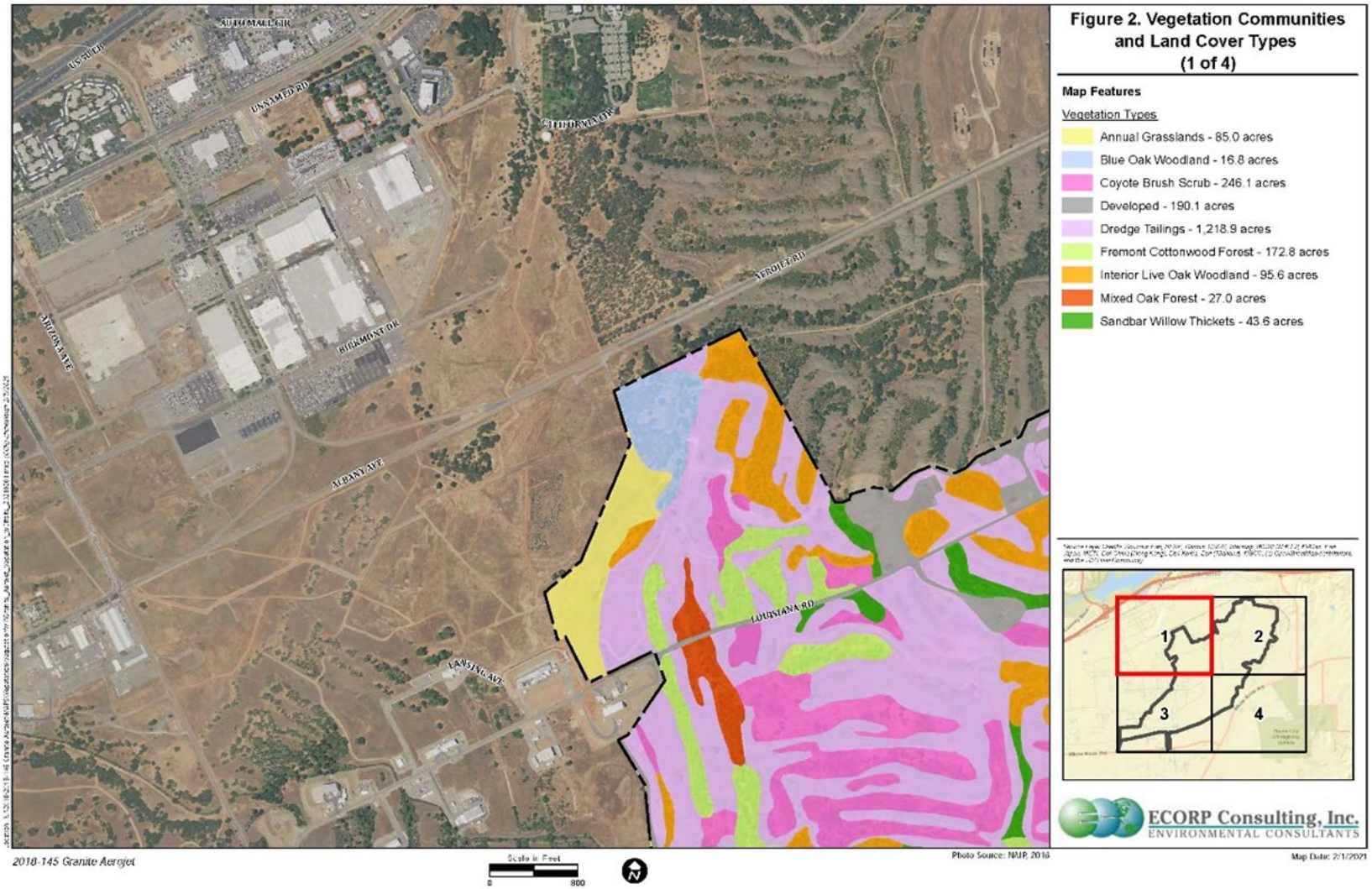


Plate BR-2: Vegetation Communities and Land Cover Types (2 of 4)

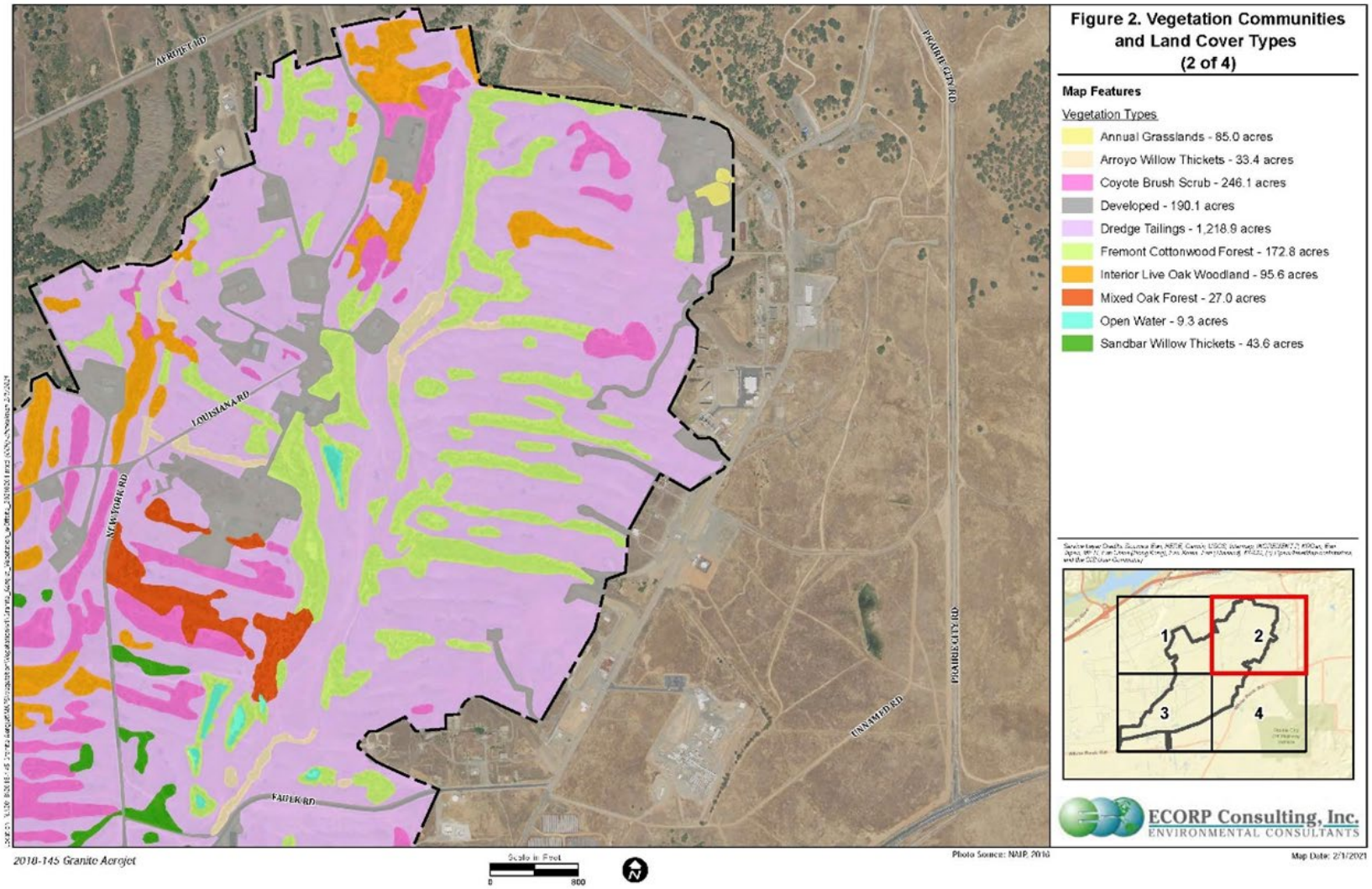


Plate BR-3: Vegetation Communities and Land Cover Types (3 of 4)

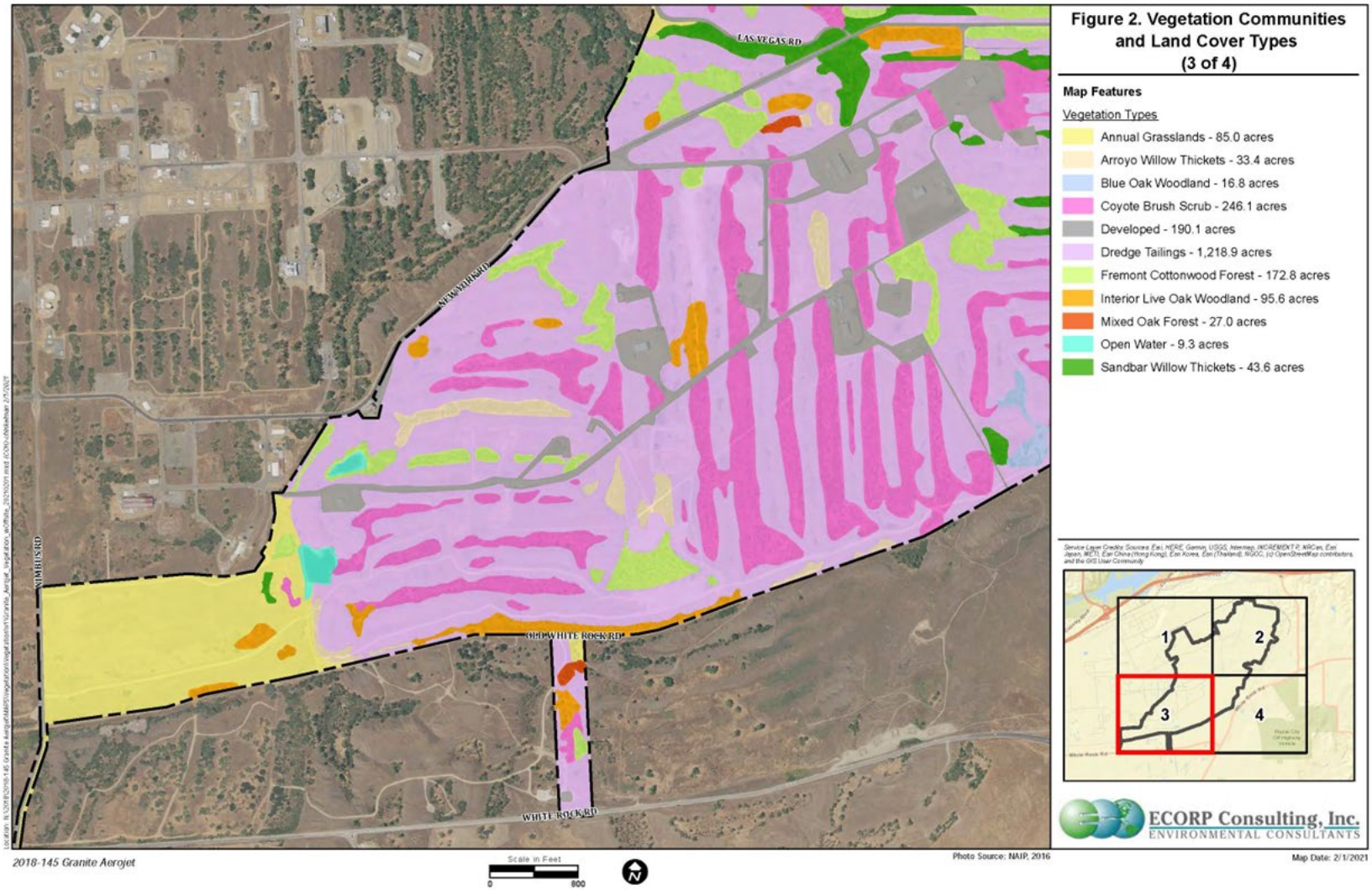
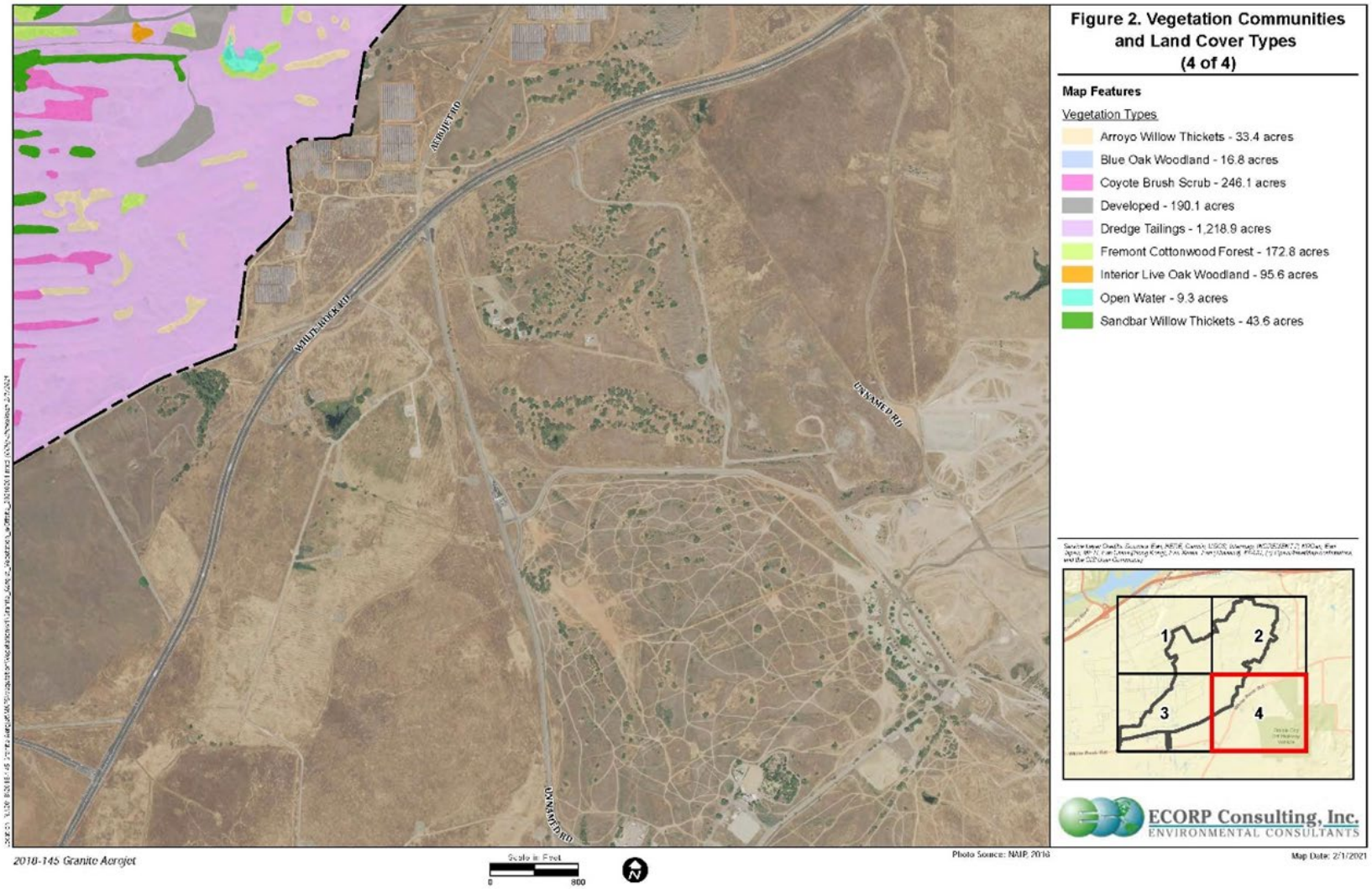


Plate BR-4: Vegetation Communities and Land Cover Types (4 of 4)



VEGETATION COMMUNITIES

ANNUAL GRASSLANDS

Approximately 85.0 acres of annual grasslands occur in the southwestern, northwestern, and northeastern portions of the project site. This community consists of a complex of vegetation alliances dominated by non-native annual grasses and forbs. Annual grasslands in the project site are generally co-dominated by ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), wild oats (*Avena fatua*), medusahead (*Elymus caput-medusae*), rose clover (*Trifolium hirtum*), common madia (*Madia elegans*), and spring vetch (*Vicia sativa).*

ARROYO WILLOW THICKETS

Approximately 33.4 acres of arroyo willow thickets were mapped throughout the project site. This vegetation community is characterized by a dense shrub canopy dominated by arroyo willow (*Salix lasiolepis*), sandbar willow (*Salix exigua*), coyote brush (*Baccharis pilularis*), and poison oak (*Toxicodendron diversilobum*). Arroyo willow is greater than 25-percent absolute cover and 50-percent relative cover in the shrub canopy. Arroyo willow thickets within the project site are primarily associated with areas between dredge tailings and occur in both dry land locations and in association with aquatic resources.

BLUE OAK WOODLANDS

Approximately 16.8 acres of blue oak woodland occurs at two locations in the northwestern and south-central portions of the project site. This vegetation community is characterized by an intermittent tree canopy dominated by blue oak (*Quercus douglasii*). Blue oak is greater than 50-percent relative cover in the tree canopy. The relatively open understory of this vegetation community is dominated by annual grasses and forbs consistent with annual grasslands occurring within the project site.

COYOTE BRUSH SCRUB

Approximately 246.1 acres of coyote brush scrub occurs throughout the project site, primarily associated with areas between dredge tailings. This vegetation community is characterized by a dense to intermittent shrub canopy dominated primarily by coyote brush. Coyote brush is greater than 15-percent absolute cover, and at least 50-percent relative cover in the shrub layer. Other shrubs that commonly occur in this vegetation community within the project site include sandbar willow, arroyo willow, blue elderberry (*Sambucus nigra ssp. caerulea*), and poison oak. Herbaceous vegetation occurring in the understory of this vegetation community is characteristic of both onsite annual grasslands and dredge tailings.

DEVELOPED

Approximately 190.1 acres of developed areas were mapped within the project site. Areas mapped as developed include man-made structures, impervious surfaces, and other regularly maintained areas which are mostly or entirely devoid of vegetation. Developed areas occur throughout the project site.

DREDGE TAILINGS

The majority of the project site, approximately 1,218.9 acres, was mapped as dredge tailings. Dredge tailings are features that were created by mining activities that operated in the area from the early 1900s through the early 1960s. These features consist of piles of cobble-sized stones that are approximately 10 to 40 feet high and several hundred feet or more in length. The vegetation composition on these features is very similar to the nonnative annual grassland community, but the plants are less dense and tend to be of lower stature. The most common species on the dredge tailings are wild oats, yellow star-thistle (*Centaurea solstitialis*), and common madia.

FREMONT COTTONWOOD FOREST

Approximately 172.8 acres of Fremont cottonwood forest occurs throughout the project site, primarily associated with areas between dredge tailings, including both dry land and riparian settings. This vegetation community is characterized by a dense to intermittent tree canopy dominated by Fremont cottonwood *(Populus fremontii*) and interior live oak (*Quercus wislizeni*). Fremont cottonwood is greater than five-percent absolute cover, and at least 50-percent relative cover in the tree layer. Other less common tree species present in this vegetation community include Gooding's black willow (*Salix gooddingii*), red willow (*Salix laevigata*), blue oak, and valley oak (*Quercus lobata*). A dense shrub layer is often present, dominated primarily by coyote brush and poison oak, with lower cover of sandbar willow and arroyo willow.

INTERIOR LIVE OAK WOODLAND

Approximately 95.6 acres of interior live oak woodland occurs throughout the project site, both between and on dredge tailings. This vegetation community is characterized by a dense to intermittent tree canopy dominated by interior live oak. Other tree species are frequently co-dominant, most commonly Fremont cottonwood and blue oak. Interior live oak is greater than 15-percent absolute cover, and 50-percent relative cover in the tree layer. A dense shrub layer is frequently present in the understory, composed primarily of coyote brush and poison oak.

MIXED OAK FOREST

Approximately 27.0 acres of mixed oak forest occur at several locations in the central portion of the project site. This vegetation community is characterized by a tree canopy that is co-dominated by interior live oak, blue oak, valley oak, and Fremont cottonwood. Quercus species are present at greater than 30-percent relative cover in the tree canopy. The understory of this vegetation community is characterized by a dense shrub understory dominated by coyote brush and poison oak.

OPEN WATER

Approximately 9.3 acres of open water were mapped within the project site. Areas mapped as open water include ponds that lack vegetation over the majority of their surface area, or that support only floating vegetation. Floating vegetation occurring within open water areas include duckweed (*Lemna* sp.) and mosquito fern (*Azolla filiculoides*). Open water features occur in the southwestern and eastern portions of the project site.

SANDBAR WILLOW THICKETS

Approximately 43.6 acres of sandbar willow thickets were mapped within the central and southwestern portions of the project site. This vegetation community is characterized by a dense shrub canopy dominated by sandbar willow, arroyo willow, coyote brush, and poison oak. Sandbar willow is greater than five percent absolute cover and 50-percent relative cover in the shrub canopy. Sandbar willow thickets within the project site are primarily associated with areas between dredge tailings and occur in both dry land locations and in association with aquatic resources.

NATIVE OAK TREES

A total of 3,096 oak trees six inches or greater in dbh have been mapped on the project site, including 1,794 interior live oaks, 1,137 blue oaks, 152 valley oaks, 9 oracle oaks[1], and 4 California black oaks (*Quercus kelloggii*) (Plate BR-5 through Plate BR-11).

ELDERBERRY SHRUBS

In 2018 and 2021, ECORP biologists conducted a focused survey to inventory the locations of elderberry shrubs within the project site (ECORP, 2021b). In 2019, a subset of mapped elderberry shrubs that occur within potential mining areas were revisited and thoroughly inspected for evidence of valley elderberry longhorn beetle (*Desmocerus californicus dimorphus;* hereafter VELB) presence in the form of larval exit holes. A map that shows an overview of the locations and survey results of the elderberry shrubs mapped within the project site is shown in Plate BR-12.

AQUATIC FEATURES

A total of 30.505 acres of aquatic features have been mapped within the project site (ECORP, 2021c) and may be subject to State or Federal regulation (Table BR-2). A map of the aquatic resources is provided in Plate BR-13 (for detailed insets, refer to Appendix BR-3). These acreages represent a calculated estimation and are subject to modification following the United States Army Corps of Engineers (USACE) and/or Central Valley Regional Water Quality Control Board (RWQCB) verification processes.

[1] A naturally occurring hybrid oak tree (*Quercus x morehus*) resulting from a cross of the California black oak and interior live oak.

Table BR-2: Aquatic Resources

Type	Total Acres
Marsh	2.116
Seasonal Wetlands	6.204
Seasonal Wetland Swale	1.019
Creek	4.169
Ditch	5.553
Pond	9.374
Seasonal Pond	1.618
Water Treatment Pond	0.451
Total:	30.505

Marsh

Marshes are wetlands that are continuously inundated or saturated throughout the year and are dominated by emergent hydrophytic plants. Marshes are wet due to accumulation of incidental rainfall, surface runoff, and/or shallow groundwater. Five marshes were mapped in the northern and western portions of the project site. The majority of marshes within the project site are characterized by an understory of perennial emergent vegetation and a fringing overstory of riparian tree species. However, there is no woody riparian vegetation associated with one of the marshes located in the northeast corner of the project site. Emergent vegetation within the onsite marshes is dominated by broadleaf cattail (*Typha latifolia*), hardstem bulrush (*Schoenoplectus acutus*), common spikerush (*Eleocharis macrostachya*), and tall flatsedge (*Cyperus eragrostis).*

Seasonal Wetland

Seasonal wetlands are ephemerally wet due to accumulation of surface runoff and rainwater within low-lying areas. Seasonal wetlands occur scattered throughout the eastern and southwestern portions of the project site. The majority of seasonal wetlands within the project site occur in basins between dredge tailings, and are dominated by smartweed (*Persicaria sp*.), Jersey cudweed (*Pseudognaphalium luteoalbum*), tall flatsedge, common spikerush, and sandbar willow.

Plate BR-5: Native Tree Inventory (1 of 7)

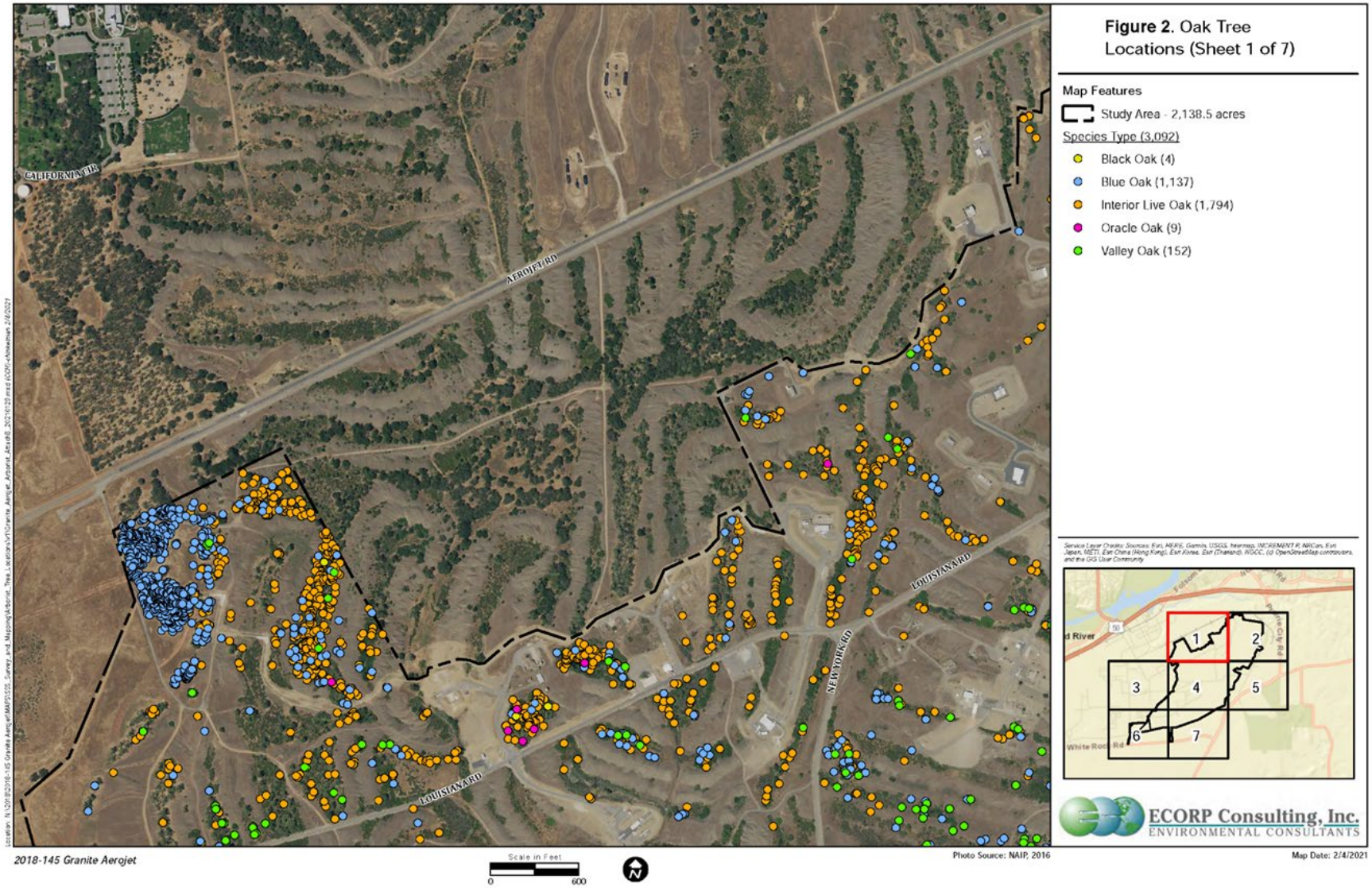


Plate BR-6: Native Tree Inventory (2 of 7)

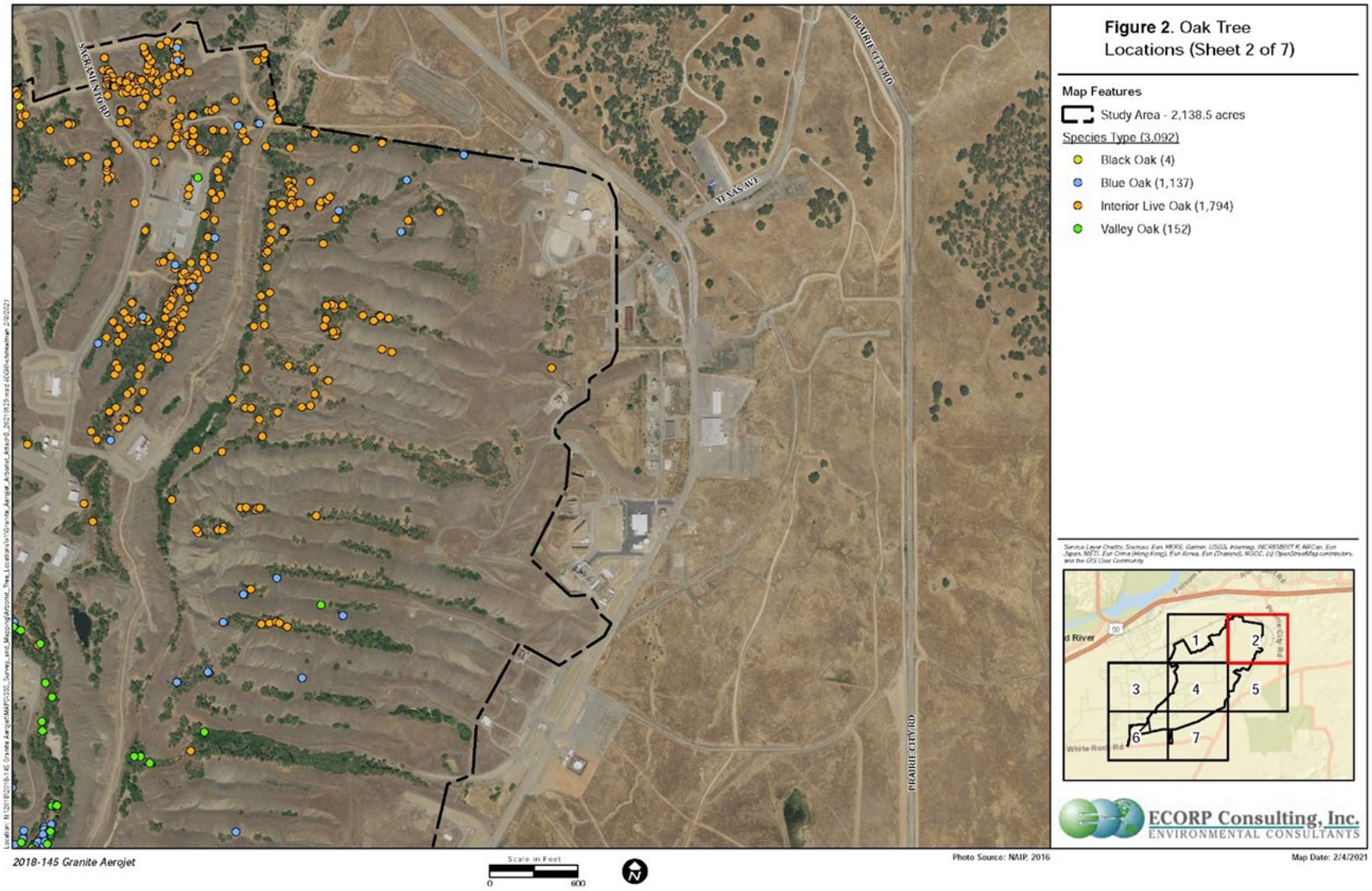


Plate BR-7: Native Tree Inventory (3 of 7)

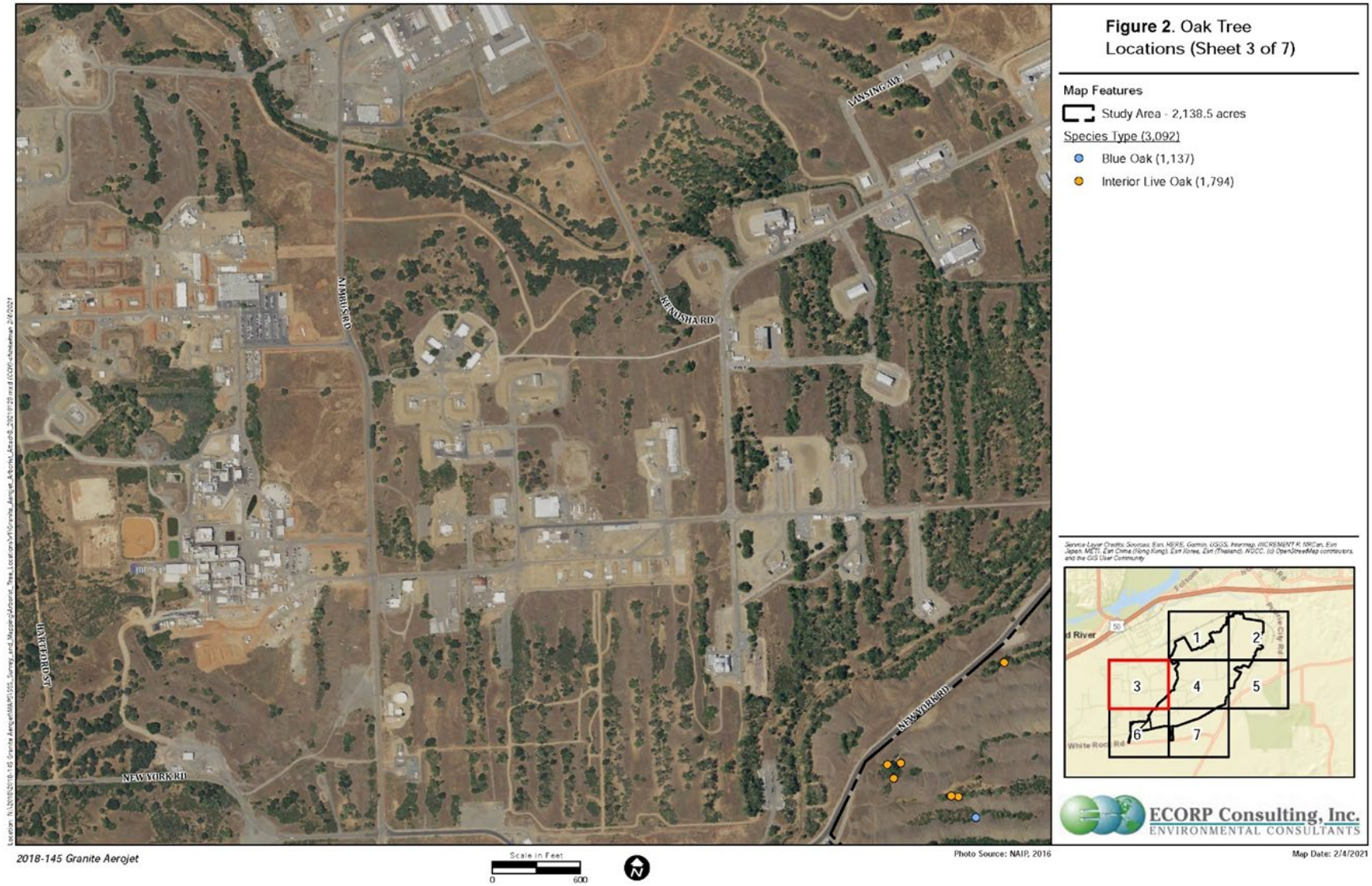


Plate BR-8: Native Tree Inventory (4 of 7)

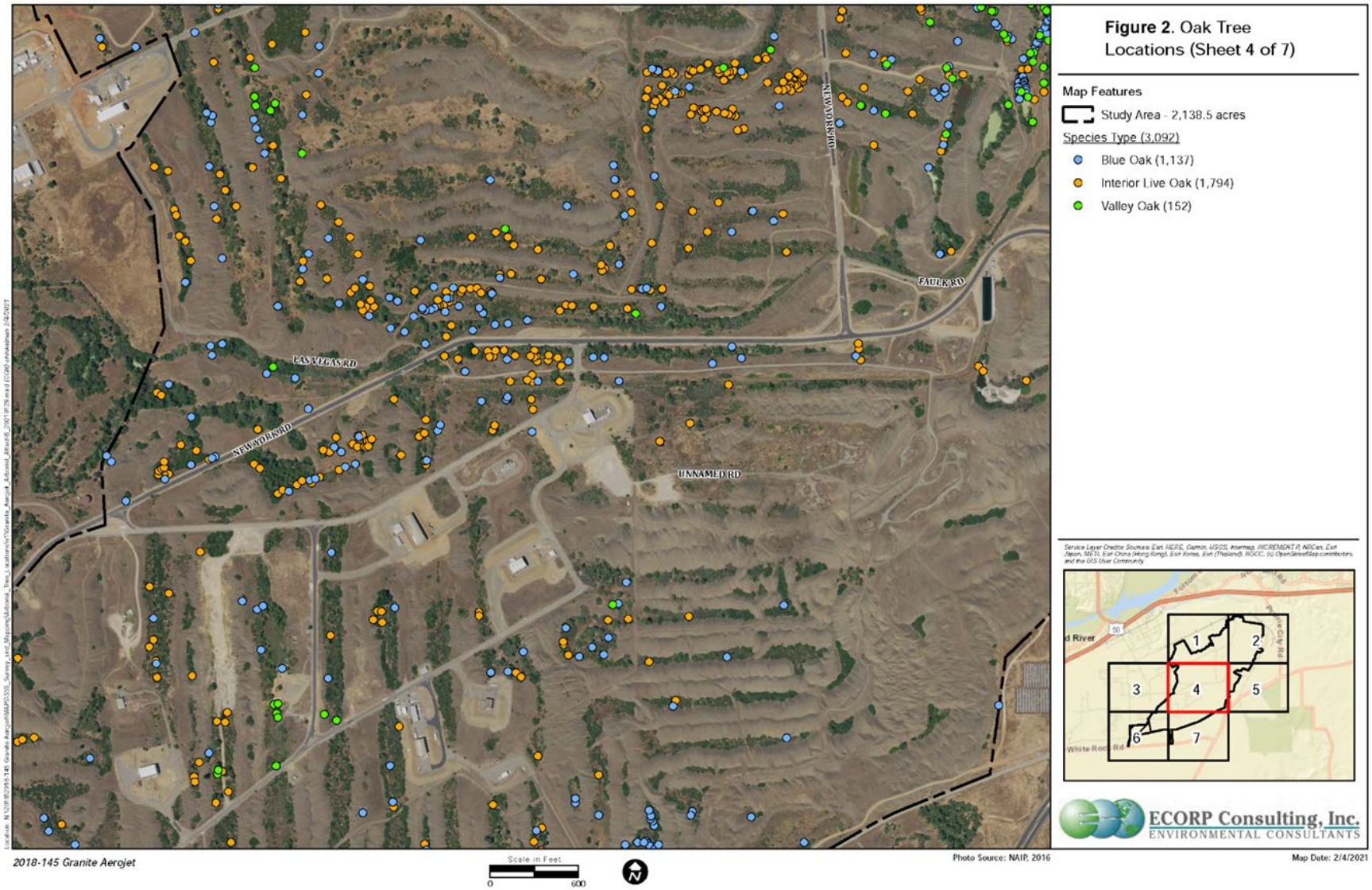


Plate BR-9: Native Tree Inventory (5 of 7)

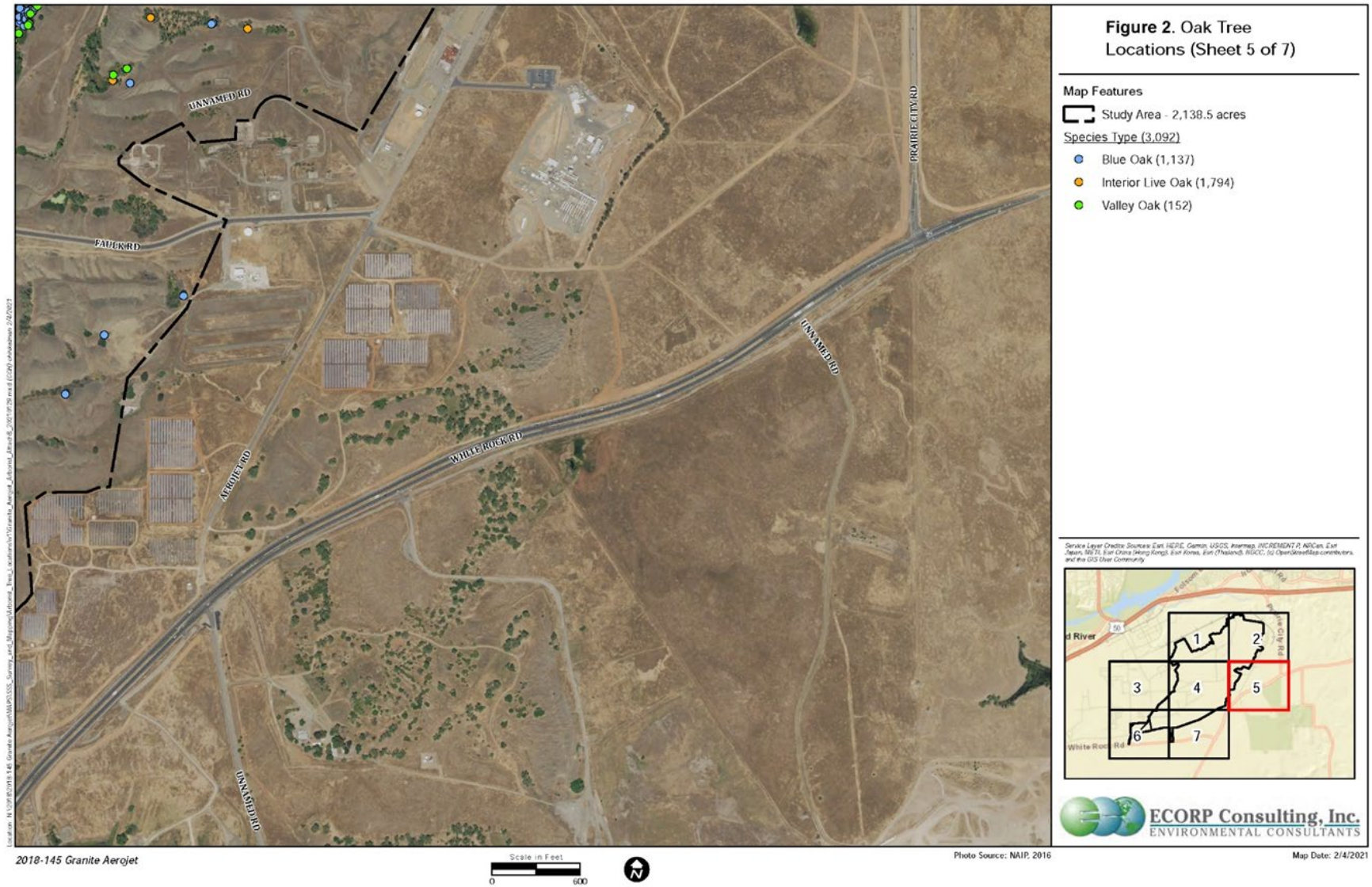
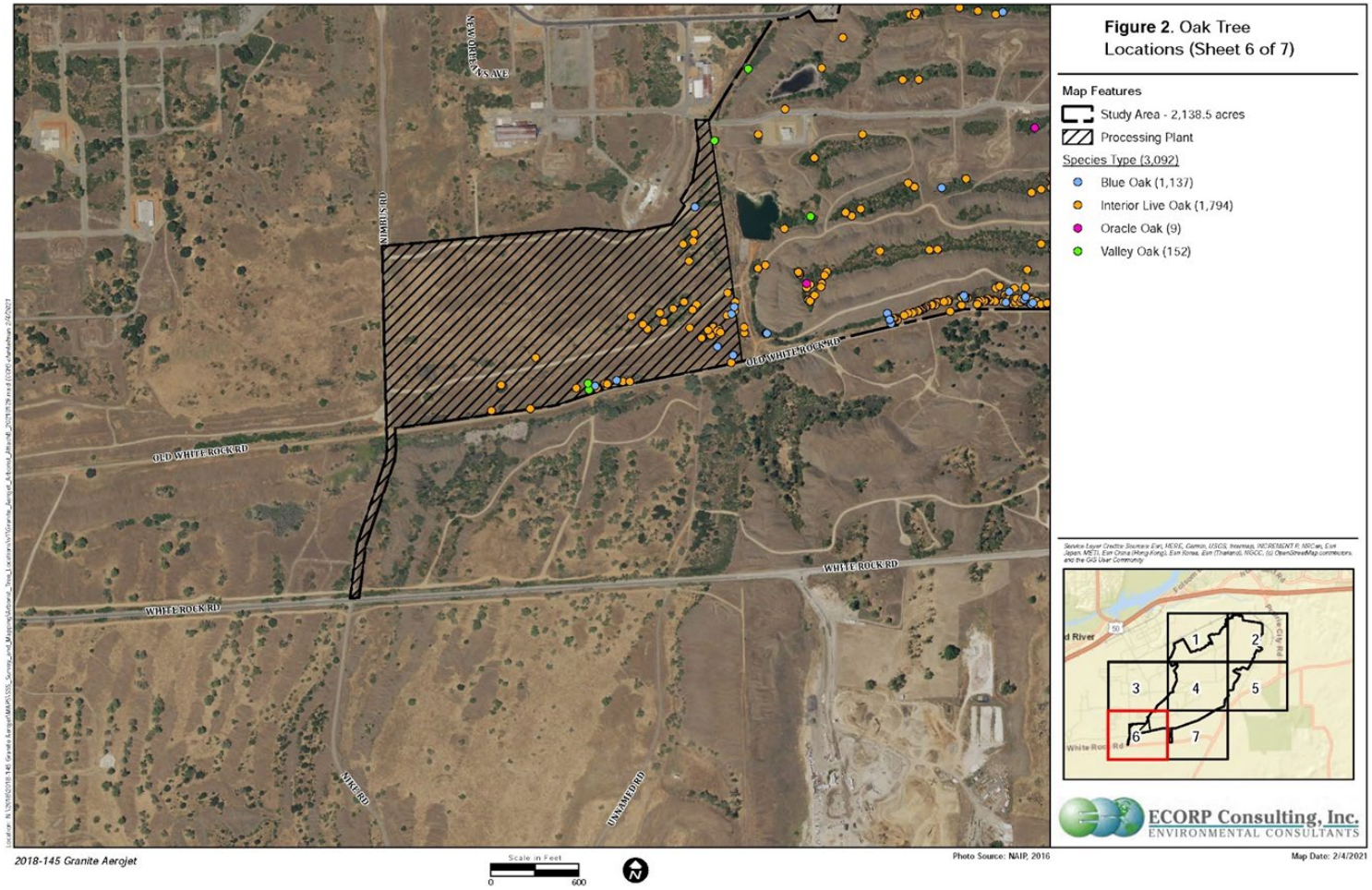


Plate BR-10: Native Tree Inventory (6 of 7)2



[2] An earlier version of the project included an onsite processing plant which has subsequently been removed. The current project proposal does not include an onsite processing plant; all material would be transported offsite via electric conveyor.

Plate BR-11: Native Tree Inventory (7 of 7)

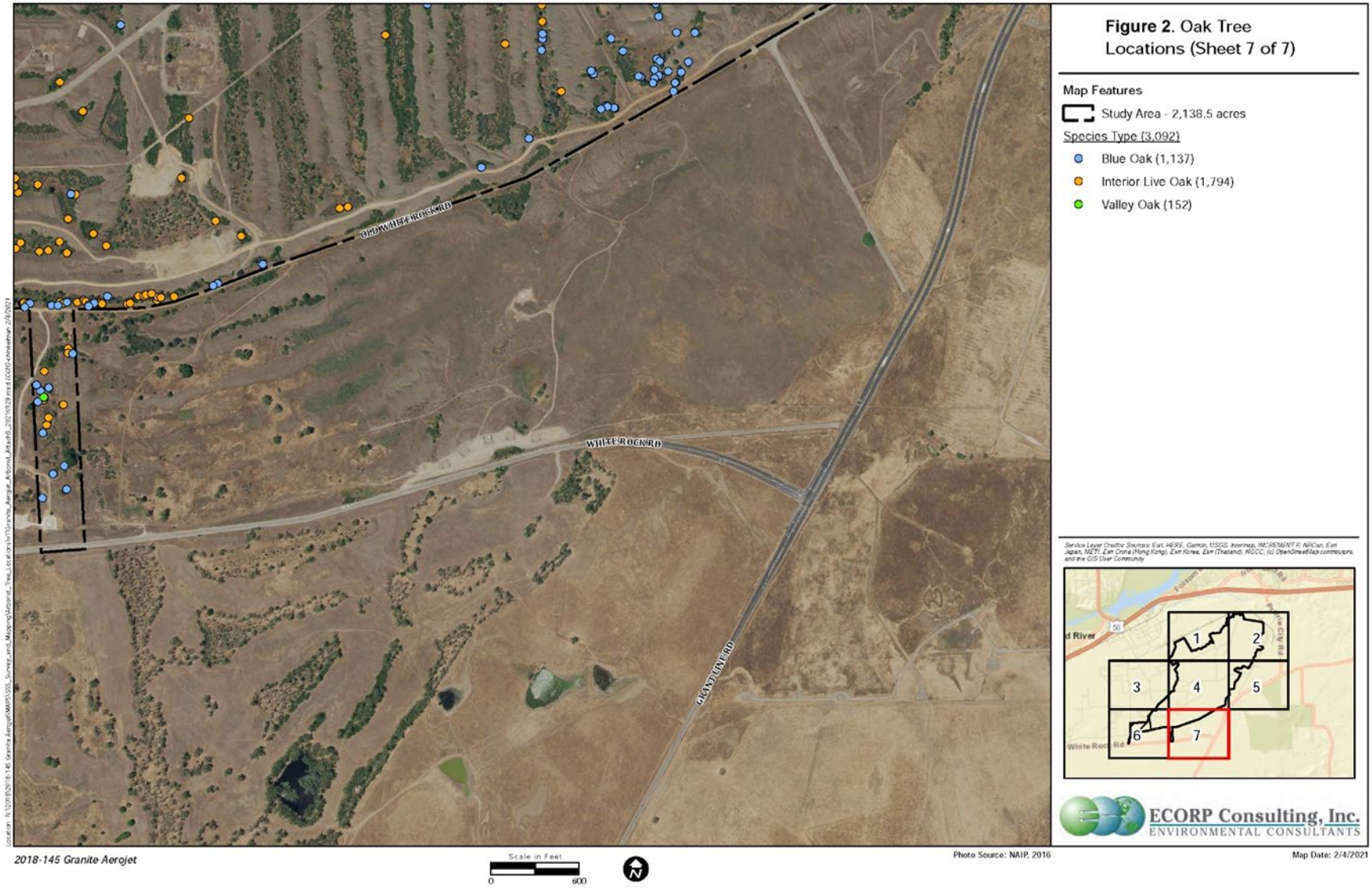


Plate BR-12: Elderberry Survey

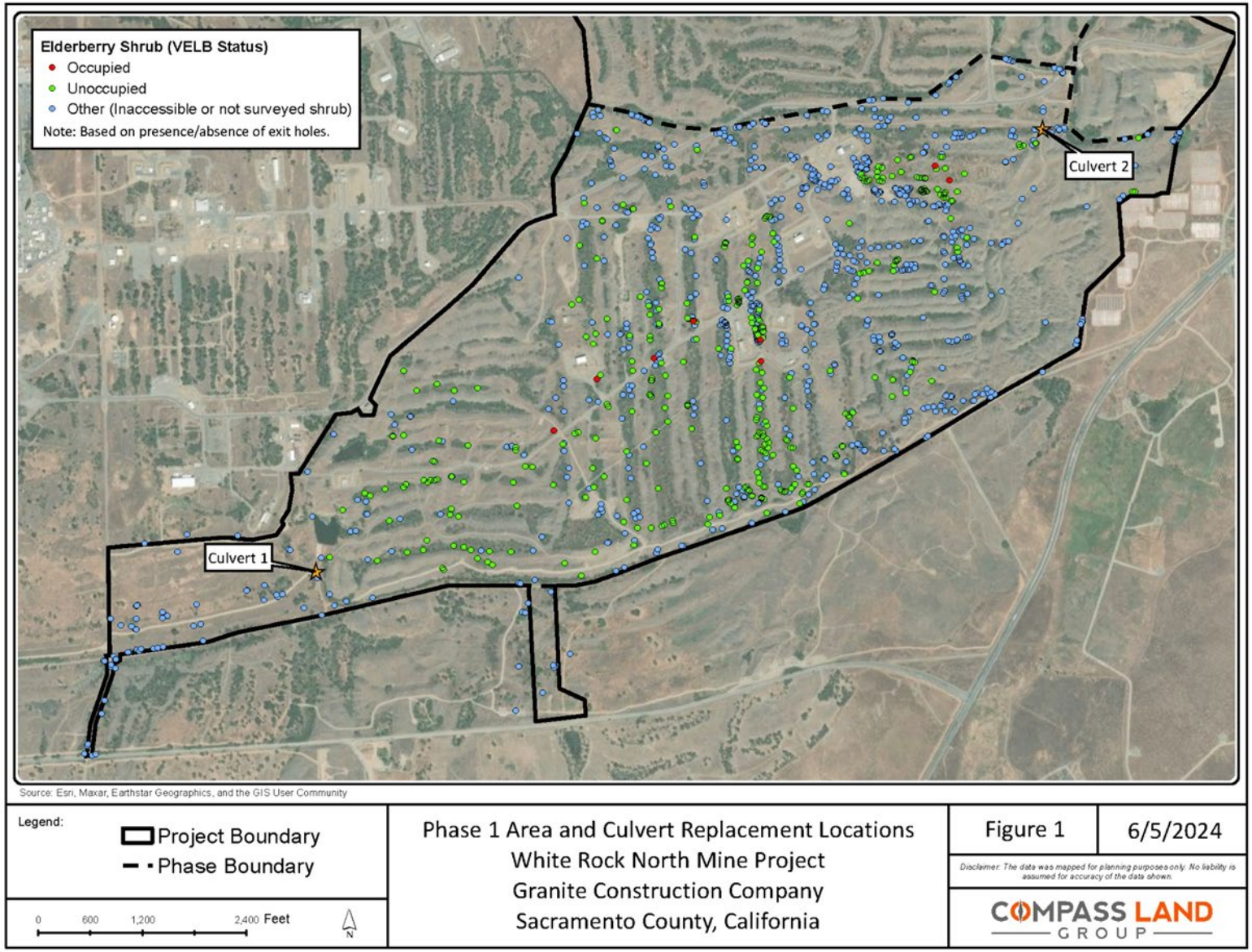
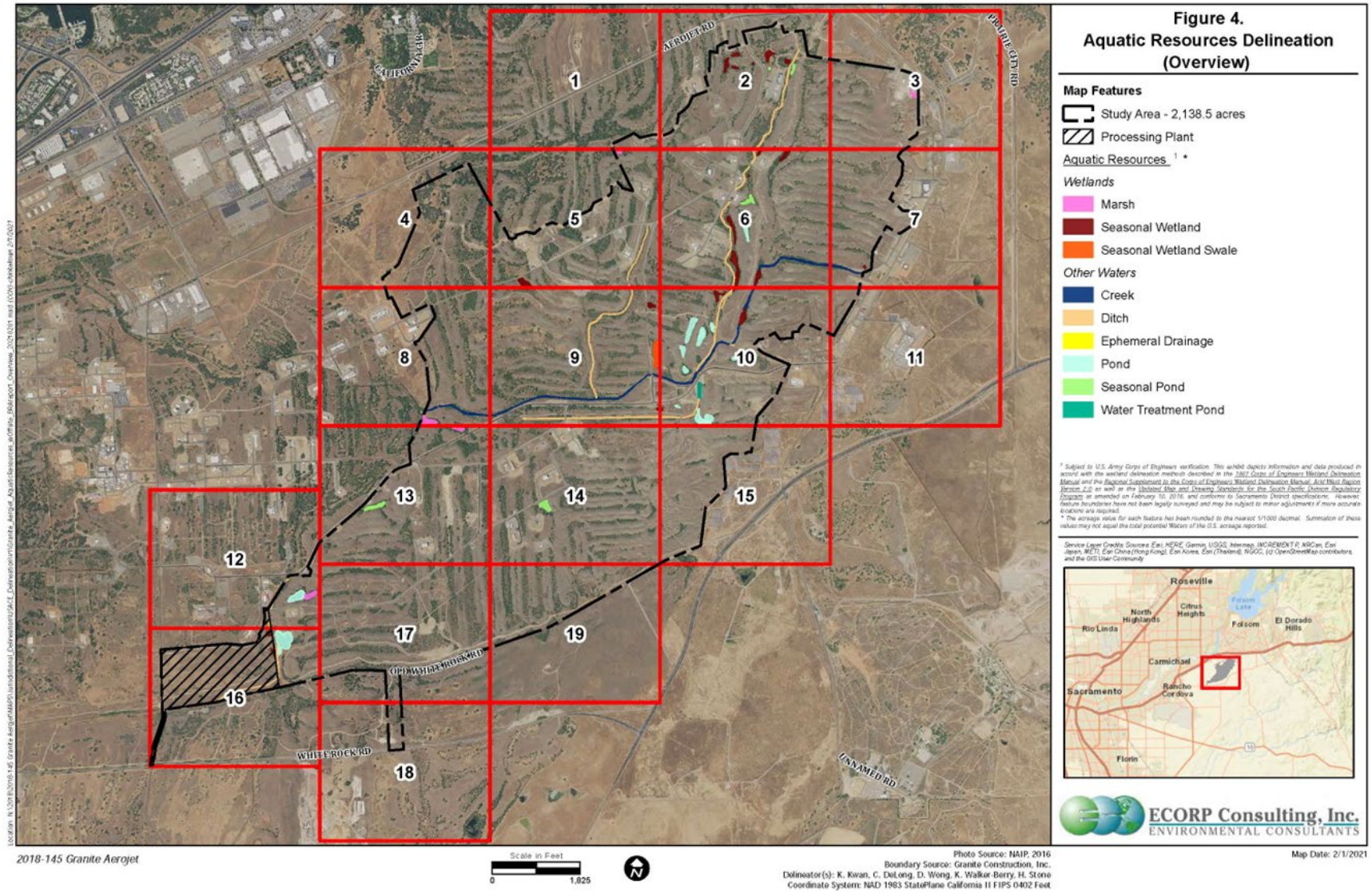


Plate BR-13: Aquatic Resources Overview



Seasonal Wetland Swale

Seasonal wetland swales are generally linear wetland features that convey precipitation runoff and support a predominance of hydrophytic vegetation, but do not exhibit an ordinary high-water mark (OHWM). These are typically inundated for short periods during and immediately after rain events, but usually maintain soil saturation for longer periods during the wet season. Seasonal wetland swales within the project site are dominated by rabbitsfoot grass, Italian ryegrass, stinkwort (*Dittrichia graveolens*), and tall flatsedge.

Creek

Creeks are linear features that exhibit a bed and bank, OHWM, and flow intermittently or continuously throughout the year. One creek (Buffalo Creek) occurs within the project site, flowing from east to west through the central portion of the project site. The easternmost portion of Buffalo Creek flows seasonally, while the central and western portions are fed throughout the year by a ditch associated with Aerojet facility operations. Within the project site, Buffalo Creek has been heavily modified through past mining activities and more recent channelization. Buffalo Creek has a relatively incised channel, with a narrow riparian corridor. The channel and riparian corridor are dominated by Fremont cottonwood, sandbar willow, arroyo willow, poison oak, and coyote brush.

Ditch

Ditches occur scattered throughout the project site. These features include shallow, ephemeral roadside drainage ditches, larger stormwater drainage ditches, and ditches constructed to convey water associated with water treatment and other facility operations. Roadside drainage ditches were mapped in the northeastern portion of the project site. These features are highly ephemeral, and were sparsely vegetated with Italian ryegrass. Larger stormwater drainage ditches were mapped throughout the northern, central, and southwestern portions of the project site. These features have sparsely vegetated channels dominated primarily by Italian ryegrass and rabbitsfoot grass. Riparian vegetation occurs on the banks of some of these features, dominated by Fremont cottonwood, sandbar willow, arroyo willow, poison oak, and coyote brush. Ditches associated with facility operations have intermittent to perennial flow patterns, and are dominated by broadleaf cattail, lowland cudweed (*Gnaphalium palustre*), yellow monkeyflower (*Mimulus guttatus*), and sandbar willow.

Pond

Ponds are depressions that are permanently or semi-permanently inundated and support open water during the growing season. Ponds exhibit an OHWM but may or may not support hydrophytic vegetation and hydric soils. Ponds occur throughout the central and southwestern portions of the project site. These features appear to be perennial or semi-perennial, and support large areas of open water. Open water areas include floating vegetation composed of duckweed and mosquito fern. The fringes of the

ponds are dominated by Fremont cottonwood, sandbar willow, red willow, common spikerush, broadleaf cattail, and hardstem bulrush.

Seasonal Pond

Seasonal ponds are depressions that are inundated during the wet season, but dry down via evaporation during the spring and summer. Seasonal ponds within the project site exhibit an OHWM and are primarily unvegetated below the OHWM. Several of these features occur in the understory of Fremont cottonwood forests. Seasonal ponds are scattered throughout the project site.

Water Treatment Pond

One water treatment pond occurs in the eastern portion of the project site. This is a concrete-lined pond that is fed by pumping and/or a diversion of Buffalo Creek. Once the water has been treated, it flows through a drainage ditch to the southwest, ultimately returning to Buffalo Creek via a pipe in the western portion of the project site.

Sensitive Natural Communities

Sensitive natural communities are communities that are of limited distribution statewide or within a county or region and may be vulnerable to effects of development projects. Sensitive natural communities are those that are listed in the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) and in the Natural Communities List as having a rarity rank of S1 through S3 (CDFW, 2021) due to the rarity of the community in the state or throughout its entire range (i.e., globally), or that have been afforded protection under local plans (e.g., Sacramento County General Plan); they also include those specifically evaluated under the California Environmental Quality Act (CEQA), Section 1602 of the California Fish and Game Code (CFGC), Section 404 of the Clean Water Act (CWA), or the State's Porter-Cologne Water Quality Control Act.

The following sensitive natural communities were identified on the project site: potentially jurisdictional waters of the U.S. and of the State; annual grasslands that provide suitable foraging habitat for Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), and grassland-specialized birds (recognized as becoming increasingly rare and limited in the region); and oak woodlands (i.e., blue oak woodland, interior live oak woodland, mixed woodland forest.

Special Status Species

Special-status species considered in this EIR include plants and animals in the following categories:

- Species officially listed or proposed for listing by the State of California or the federal government as endangered, threatened, or rare;
- Candidates for state or federal listing as endangered or threatened;
- Species identified by the CDFW as a Species of Special Concern;

- Species listed as Fully Protected under the CFGC;
- Species listed as Bird of Conservation Concern by the USFWS;
- Species afforded protection under local or regional planning documents, such as Covered Species under the South Sacramento Habitat Conservation Plan (SSHCP);
- Taxa (i.e., taxonomic categories or groups) considered by CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank (CRPR). The CDFW system includes six rarity and endangerment ranks for categorizing plant species of concern, which are summarized as follows:
    - CRPR 1A - Plants presumed to be extinct in California;
    - CRPR 1B - Plants that are rare, threatened, or endangered in California and elsewhere;
    - CRPR 2A - Plants presumed to be extinct in California, but more common elsewhere;
    - CRPR 2B - Plants that are rare, threatened, or endangered in California, but more common elsewhere;
    - CRPR 3 – Plants about which more information is needed (a review list); and,
    - CRPR 4 – Plants of limited distribution (a watch list).
- Taxa that meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the CEQA Guidelines.

All plants with a CRPR rank are considered "special plants" by CDFW. The term "special plants" is a broad term used by CDFW to refer to all the plant taxa inventoried in CDFW's CNDDB, regardless of their legal or protection status. Plants ranked as CRPR 1A, 1B, 2A, and 2B may qualify as endangered, rare, or threatened species within the definition of CEQA Guidelines Section 15380. CDFW recommends that potential impacts to CRPR 1 and 2 species be evaluated in CEQA documents. In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to CEQA Guidelines Section 15380. However, these species may be evaluated by the lead agency on a case-by-case basis. Because of the association of several CRPR Rank 3 and 4 species with sensitive aquatic habitats that are present in the project site, CRPR Rank 3 and 4 species were considered "special-status" in this EIR analysis. The probability of discovering these species on dredger piles that have already been subject to disturbance is, however, considered to be low.

Table BR-3 details the species identified in the species searches and the likelihood of occurrence based on habitat presence either on the site or in the vicinity of the site (5-mile radius), survey results, and nearby recorded species occurrences. Habitat proximity is based on published buffers established by a regulatory agency. For instance, guidance for the Swainson's hawk establishes a nesting buffer of ½-mile and includes mitigation requirements for construction activities in that range. Note that some species are listed for loss of foraging habitat, while others may be listed for loss of

breeding habitat. If the species is listed for loss of a particular habitat, it is reported as such in Table BR-3, and the likelihood of occurrence will be based specifically on that habitat type. Likelihood of occurrence is rated as Present, Potential to Occur, Low Potential to Occur, or Absent, which are defined as:

- Present – Species was observed during the site visits or is known to occur within the project site boundary based on documents occurrences withing the CNDDB or other literature.
- Potential to Occur – Habitat (including soils and elevational requirements) for the species occurs within the project site.
- Low Potential to Occur – Marginal or limited amounts of habitat occurs, and/or the species is not known to occur in the vicinity based on CNDDB records and other available documentation.
- Absent – No suitable habitat (including soils, geographical features, and elevation requirements) and/or the species is not known to occur in the vicinity (5-mile radius) based on CNDDB records and other documentation.

Refer to the Methodology section below for additional information regarding the determination of potential species presence. Species which are not present or were found to have a low potential of occurrence are not discussed further in subsequent analysis sections.

Table BR-3: Special Status Species Matrix

Common Name (Scientific Name)	ESA Status	CESA Status	Other	Habitat Description	Survey Period	Potential to Occur On-Site
Amphibians						
Western spadefoot (*Spea hammondii*)	--	--	SSC, SSHCP	California endemic species of vernal pools, swales, wetlands and adjacent grasslands throughout the Central Valley.	March-May	Potential – suitable habitat present in the project site
California red-legged frog (*Rana draytonii*)	FT	--	SSC	Lowlands or foothills at waters with dense shrubby or emergent riparian vegetation. Adults must have aestivation habitat to endure summer dry down.	N/A	Absent – outside of the species known range
Foothill yellow-legged frog (*Rana boylii*)	--	CC	SSC	Foothill yellow-legged frogs can be active all year in warmer locations, but may become inactive or hibernate in colder climates. At lower elevations, foothill yellow- legged frogs likely spend most of the year in or near streams. Adult frogs, primarily males, will gather along main-stem rivers during spring to breed.	May-October	Absent – no known occurrences in the areas surrounding the project site
California tiger salamander (Central California DPS) (*Ambystoma californiense)*	FT	CT	SSC, SSHCP	Vernal pools, wetlands (breeding) and adjacent grassland or oak woodland; needs underground refuge (e.g., ground squirrel and/or gopher burrows). Largely terrestrial as adults.	March-May	Absent – outside of the species known range
Birds						
Vaux's swift (*Chaetura vauxi*)	--	--	SSC	In California, breeds along the coastal zone from Del Norte County south to Santa Cruz County; Yosemite National Park, possibly Warner and Whites Mountains and Sequoia National Park Nest in late stage coniferous forests and deciduous forests mixed with coniferous. Winters from central Mexico to South America.	May-August	Absent – no suitable nesting habitat present in the project site

Common Name (Scientific Name)	ESA Status	CESA Status	Other	Habitat Description	Survey Period	Potential to Occur On-Site
Rufous hummingbird (*Selasphorus rufus*)	--	--	BCC	Breeds in extreme northwestern California north into British Columbia and Alaska. Winters in coastal Southern California south into Mexico. Common migrant during March-April in Sierra Nevada foothills and June-August in Lower Conifer to Alpine zone of Sierra Nevada. Nesting habitat includes secondary succession communities and openings, mature forests, parks and residential area	April–July	Absent – no suitable habitat present in the project site
California black rail (*Laterallus jamaicensis coturniculus*)	--	CT	BCC, CFP	Salt marsh, shallow freshwater marsh, wet meadows, and flooded grassy vegetation. In California, primarily found in coastal and Bay-Delta communities, but also in Sierran foothills (Butte, Yuba, Nevada, Placer counties)	March-September (breeding)	Absent – no suitable habitat present in the project site
Golden eagle (*Aquila chrysaetos*)	--	--	BCC, CFP	Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/ savannah, and chaparral. Nesting occurs on cliff ledges, riverbanks, trees, and human-made structures (e.g. windmills, platforms, and transmission towers). Breeding occurs throughout California, except the immediate coast, Central Valley floor, Salton Sea region, and the Colorado River region, where they can be found during Winter.	Nest (February–August); winter CV (October–February)	Low Potential – marginally suitable foraging habitat present in the project site
Ferruginous hawk (*Buteo regalis*)	--	--	BCC, SSHCP	Rarely breeds in California (Lassen County); winter range includes grassland and shrub steppe habitats from Northern California (except northeast and northwest corners) south to Mexico and east to Oklahoma, Nebraska, and Texas.	September - March (wintering)	Potential – suitable foraging habitat present in the project site
Swainson's hawk (*Buteo swainsoni*)	--	CT	BCC SSHCP	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland,	March-August	Potential – suitable foraging and nesting habitat present in the project site

Common Name (Scientific Name)	ESA Status	CESA Status	Other	Habitat Description	Survey Period	Potential to Occur On-Site
				agricultural lands, particularly during disking/harvesting, irrigated pastures.		
Northern harrier (*Circus hudsonius*)	--	--	SSC	Nests on the ground in open wetlands, marshy meadows, wet/lightly grazed pastures, (rarely) freshwater/brackish marshes, tundra, grasslands, prairies, croplands, desert, shrub-steppe, and (rarely) riparian woodland communities.	April-September	Potential – suitable foraging and nesting habitat present in the project site
White-tailed kite (*Elanus leucurus*)	--	--	CFP	Nesting occurs within trees in low elevation grassland, agricultural, wetland, oak woodland, riparian, savannah, and urban habitats.	March-August	Potential – suitable foraging and nesting habitat present in the project site
Prairie falcon (*Falco mexicanus*)	--	--	BCC,	Found in open habitat at all elevations up to 3,350 meters (Steenhof 2013). Nests on cliffs and bluffs in arid plains and steppes; In California, nesting throughout state except northwest corner, along immediate coast, and the Central Valley floor. Winters throughout California, in open habitats, such as grasslands in Central Valley.	March-July (breeding); September - February (wintering in Central Valley)	Low Potential – does not nest in the region, but may winter in the project site and marginally suitable foraging habitat present in the project site
American peregrine falcon (*Falco peregrinus anatum*)	Delisted	Delisted	BCC, CFP	In California, breeds in coastal region, northern California, and Sierra Nevada. Nesting habitat includes cliff ledges and human-made ledges on towers and buildings. Wintering habitat includes areas where there are large concentrations of shorebirds, waterfowl, pigeons or doves.	CA Residents nest in February-June	Absent – no suitable nesting habitat present in the project site
Burrowing owl *(Athene cunicularia)*	--	--	BCC, SSC, SSHCP	Nests in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g., prairie dogs, California ground squirrels). May also use human-made habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds.	February-August	Potential – suitable foraging and nesting habitat present in the project site

Common Name (Scientific Name)	ESA Status	CESA Status	Other	Habitat Description	Survey Period	Potential to Occur On-Site
Lewis' woodpecker *(Melanerpes lewis)*	--	--	BCC	In California, breeds in Siskiyou and Modoc Counties, Warmer Mountains, inner coast ranges from Tehama to San Luis Obispo Counties, San Bernardino Mountains, and Big Pine Mountain (Inyo Co.); nesting habitat includes open ponderosa pine forest, open riparian woodland, logged/burned forest, and oak woodlands. Does not breed on the west side of Sierran crest (Beedy and Pandalfino, 2013).	April–September (breeding); September – March (winter in Central Valley).	Potential – suitable foraging habitat present in the project site
Nuttall's woodpecker (*Picoides nuttallii*)	--	--	BCC	Resident from northern California south to Baja California. Nests in tree cavities in oak woodlands and riparian woodlands.	April–July	Potential – suitable habitat present in the project site
Loggerhead shrike *(Lanius ludovicianus)*	--	--	BCC, SSC, SSHCP	Found throughout California in open country with short vegetation, pastures, old orchards, grasslands, agricultural areas, open woodlands. Not found in heavily forested habitats.	March-July	Potential – suitable foraging and nesting habitat present in the project site
Yellow-billed magpie (*Pica nuttallii*)	--	--	BCC	Endemic to California; found in the Central Valley and coast range south of San Francisco Bay and north of Los Angeles County.; nesting habitat includes oak savannah with large in large expanses of open ground; also found in urban parklike settings.	April–June	Potential – suitable habitat present in the project site
Oak titmouse (*Baeolophus inornatus*)	--	--	BCC	Nests in tree cavities within dry oak or oak-pine woodland and riparian; where oaks are absent, they nest in juniper woodland, open forests (gray, Jeffrey, Coulter, pinyon pines and Joshua tree)	March–July	Potential – suitable habitat present in the project site
Wrentit (*Chamaea fasciata*)	--	--	BCC	Resident bird found along the California and Oregon coast and California Central Valley regions. Breeds in many habitats that generally have a relatively dense understory including riparian oak woodlands, Douglas fir and redwood forests, riparian willow scrub, and mixed	March–August	Absent – no suitable habitat present in the project site

Common Name (Scientific Name)	ESA Status	CESA Status	Other	Habitat Description	Survey Period	Potential to Occur On-Site
				conifer habitats. This species will also nest in and use manzanita, scrubby oaks, coastal sage scrub, California lilac, coyote bush and blackberry thickets. Wrentit prefer to stay elevated and rarely forage on the ground for sources of food, which are primarily made up of arthropods including insects and spiders as well as fruit and seeds.		
California thrasher *(Toxostoma redivivum)*	--	--	SSC	Resident and endemic to coastal and Sierra Nevada- Cascade foothill areas of California. Nests are usually well hidden in dense shrubs, including scrub oak, California lilac, and chamise.	February–July	Absent – no suitable habitat present in the project site
Lawrence's goldfinch *(Spinus lawrencei)*	--	--	BCC	Breeds in Sierra Nevada and inner Coast Range foothills surrounding the Central Valley and the southern Coast Range to Santa Barbara County east through southern California to the Mojave Desert and Colorado Desert into the Peninsular Range. Nests in arid and open woodlands with chaparral or other brushy areas, tall annual weed fields, and a water source (e.g., small stream, pond, lake), and to a lesser extent riparian woodland, coastal scrub, evergreen forests, pinyon-juniper woodland, planted conifers, and ranches or rural residences near weedy fields and water.	March–September	Absent – no suitable habitat present in the project site
Grasshopper sparrow *(Ammodramus savannarum)*	--	--	SSC	In California, breeding range includes most coastal counties south to Baja California; western Sacramento Valley and western edge of Sierra Nevada region. Nests in moderately open grasslands and prairies with patchy bare ground. Avoids grasslands with extensive shrub cover; more likely to occupy large	May–August	Low Potential – marginally suitable habitat present in the project site

Common Name (Scientific Name)	ESA Status	CESA Status	Other	Habitat Description	Survey Period	Potential to Occur On-Site
				tracts of habitat than small fragments; removal of grass cover by grazing often detrimental.		
Song sparrow "Modesto" (*Melospiza melodia heermanni*)	--	--	BCC, SSC	Resident in central and southwest California, including Central Valley; nests in marsh, scrub habitat	April–June	Potential – suitable habitat present in the project site
Yellow-breasted chat (*Icteria virens*)	--	--	SSC	In California, breeds in Klamath Mountains, inner Northern Coast Range south to San Francisco Bay, locally distributed from Santa Clara County south to San Diego County Sacramento and San Joaquin valleys, along west slope of Sierra Nevada from the Feather River to Kern River, Mono and Inyo counties. In the west, nesting habitat includes dense riparian and shrubby.	May-August	Potential – suitable foraging and nesting habitat present in the project site
Tricolored blackbird (*Agelaius tricolor*)	--	CT	BCC, SSC, SSHCP	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta Cos south to San Bernardino, Riverside and San Diego Counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen Counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields.	March-August	Potential – suitable foraging habitat and marginally suitable nesting habitat present in the project site
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	--	--	BCC, SSC	Breeds in salt marshes of San Francisco Bay; winters San Francisco south along coast to San Diego Co.	March–July	Absent – no suitable habitat present in the project site
Yellow warbler (*Setophaga petechia*)	--	--	SSC, BCC	Breeding range includes most of California, except Central Valley (isolated breeding locales on Valley floor, Stanislaus, Colusa, and Butte Counties), Sierra Nevada range above tree line, and	May-August	Absent – this species does not nest in the region

Common Name (Scientific Name)	ESA Status	CESA Status	Other	Habitat Description	Survey Period	Potential to Occur On-Site
				southeastern deserts. Nesting habitat includes riparian vegetation near streams and meadows. Winters in Mexico south to South America.		
Purple martin *(Progne subis)*	--	--	SSC	In California, breeds along coast range, Cascade- northern Sierra Nevada region and isolated population in Sacramento. Nesting habitat includes montane forests, Pacific lowlands with dead snags; the isolated Sacramento population nests in weep holes under elevated highways/bridges. Winters in South America.	May-August	Absent – no suitable nesting habitat present in the project site
Bank swallow *(Riparia riparia)*	--	CT	--	Nests colonially along coasts, rivers, streams, lakes, reservoirs, and wetlands in vertical banks, cliffs, and bluffs in alluvial, friable soils. May also nest in sand, gravel quarries and road cuts. In California, breeding range includes northern and central California.	May–July	Absent – no suitable habitat present in the project site
Fishes						
Delta smelt (*Hypomesus transpacificus*)	FT	CE	--	Sacramento-San Joaquin delta	N/A	Absent – no suitable habitat present in the project site
Steelhead (CA Central Valley DPS) (*Oncorhynchus mykiss irideus*)	FT	--	--	Undammed rivers, streams, and creeks	N/A	Absent – no suitable habitat present in the project site
Pacific lamprey (*Lampetra tridentata*)	--	--	SSC	Anadromous; undammed streams rivers, streams, and creeks with gravel spawning substrates.	N/A	Absent – no suitable habitat present in the project site
Invertebrates						
Conservancy fairy shrimp (*Branchinecta conservatio)*	FE	--	--	Vernal pools/wetlands.	November–April	Absent – outside of the species known range

Common Name (Scientific Name)	ESA Status	CESA Status	Other	Habitat Description	Survey Period	Potential to Occur On-Site
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	--	SSHCP	Vernal pools/wetlands.	November-April	Potential – suitable habitat present in the project site
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	--	SSHCP	Vernal pools/wetlands.	November-April	Potential – suitable habitat present in the project site
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	--	SSHCP	Elderberry shrubs.	Any season	Present – known to occur in the project site.
Crotch's bumble bee (Bombus crotchii)[3]	--	CE	--	Open grasslands and scrubs		Potential – suitable habitat present in the project site.
Mammals						
Pallid bat *(Antrozous pallidus)*	--	--	SSC	Crevices in rocky outcrops and cliffs, caves, mines, trees (e.g. basal hollows of redwoods, cavities of oaks, exfoliating pine and oak bark, deciduous trees in riparian areas, and fruit trees in orchards). Also roosts in various human structures such as bridges, barns, porches, bat boxes, and human occupied as well as vacant buildings (Western Bat Working Group [WBWG] 2018).	April–September	Potential – suitable habitat present in the project site
Western red bat (*Lasiurus blossevillii*)	--	--	SSC, SSHCP	Roosts in foliage of trees or shrubs; Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores) (WBWG, 2018).	April-September	Potential – suitable habitat present in the project site

[3] At the time the Biological Resources Report was prepared, Crotch's bumble bee was not listed as endangered. It has since been listed, and because the project site contains potentially suitable habitat, the species has been considered in this evaluation.

Common Name (Scientific Name)	ESA Status	CESA Status	Other	Habitat Description	Survey Period	Potential to Occur On-Site
American badger *(Taxidea taxus)*	--	--	SSC, SSHCP	Drier open stages of most shrub, forest, and herbaceous habitats with friable soils.	Any season	Potential – suitable habitat present in the project site
San Joaquin kit fox *(Vulpes macrotis mutica)*	FE	CT	--	Grasslands, sagebrush scrub.	April 15 - July 15, September 1 - December 1	Absent – no suitable habitat present in the project site and outside of known range
Reptiles						
Northwestern pond turtle (*Actinemys marmorata*)	--	--	SSC, SSHCP	Requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches.	Any season	Present – species was observed in the project site
Blainville's ("Coast") horned lizard (*Phrynosoma blainvillii*)	--	--	SSC	Formerly a wide-spread horned lizard found in a wide variety of habitats, often in lower elevation areas with sandy washes and scattered low bushes. Also occurs in Sierra Nevada foothills. Requires open areas for basking, but with bushes or grass clumps for cover, patches of loamy soil or sand for burrowing and an abundance of ants (Stebbins and McGinnis, 2012). In the northern Sacramento area, this species appears restricted to the foothills between 1000 to 3000 feet from Cameron Park (El Dorado County) north and west to Grass Valley and Nevada City.	Apr-Oct	Absent – no suitable habitat present in the project site and out of the species range
Giant garter snake (*Thamnophis gigas*)	FT	CT	SSHCP	Freshwater ditches, sloughs, and marshes in the Central Valley. Almost extirpated from the southern parts of its range.	April-October	Absent – no suitable habitat present in the project site and out of the species range
Plants						
Brewer's calandrinia *(Calandrinia breweri)*	--	--	4.2	Sandy or loamy soils, disturbed sites, and burns within chaparral and coastal scrub (33'–4,003').	March–June	Absent – no suitable habitat present in the project site

Common Name (Scientific Name)	ESA Status	CESA Status	Other	Habitat Description	Survey Period	Potential to Occur On-Site
Hispid bird's-beak *(Chloropyron molle ssp. hispidum)*	–	–	1B.1	Alkaline soils in meadows and seeps, playas, and valley and foothill grasslands (3'–509').	June–September	Potential – suitable habitat present in the project site
Bisbee Peak rush–rose *(Crocanthemu suffrutescens)*	–	–	3.2	Often gabbroic or Ione soil or in burned or disturbed areas within chaparral (246'–2,198').	April–August	Absent – no suitable habitat present in the project site
Ione Buckwheat *(Eriogonum apricum* var. *apricum)*	FE	CE	1B.1	Openings in chaparral communities found on Ione soils (197'–476').	July–October	Absent – no suitable habitat present in the project site
Irish Hill Buckwheat *(Eriogonum apricum* var. *prostratum)*	FE	CE	1B.1	Openings in chaparral communities found on Ione soils (295'–394').	June–July	Absent – no suitable habitat present in the project site
Legenere *(Legenere limosa)*	–	–	1B.1, SSHCP	Various seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (USFWS 2005b) (3'–2,887').	April–June	Potential – suitable habitat present in the project site
Hoary navarretia *(Navarretia eriocephala)*	--	--	4.3	Vernally mesic areas in cismontane woodland and Valley and foothill grassland (345' - 1,312').	May-June	Potential – suitable habitat present in the project site
Pincushion navarretia *(Navarretia myersii* ssp. *myersii)*	–	–	1B.1, SSHCP	Often acidic soils in vernal pools (66'–1,083').	April–May	Potential – suitable habitat present in the project site
Adobe navarretia *(Navarretia nigelliformis* ssp. *nigelliformis)*	–	–	4.2	Clay and sometimes serpentinite soils in vernally mesic valley and foothill grasslands and sometimes in vernal pools (328'–3,281).	April–June	Potential – suitable habitat present in the project site
Slender Orcutt grass *(Orcuttia tenuis)*	FT	CE	1B.1, SSHCP	Vernal pools, often gravelly (115'–5,774').	May–September	Potential – suitable habitat present in the project site
Sacramento Orcutt grass *(Orcuttia viscida)*	FE	CE	1B.1, SSCHP	Vernal pools (98'–328').	April–July	Potential – suitable habitat present in the project site
Stebbins' morning-glory *(Calystegia stebbinsii)*	FE	CE	1B.1	Gabbroic or serpentine soils in chaparral and cismontane woodland (607'–3,576').	April–July	Absent – no suitable habitat present in the project site

Common Name (Scientific Name)	ESA Status	CESA Status	Other	Habitat Description	Survey Period	Potential to Occur On-Site
Chaparral sedge *(Carex xerophila)*	–	–	1B.2	Serpentinite or gabbroic soils within chaparral, cismontane woodland, and lower montane coniferous forest (1,444'–2,526').	March–June	Absent – no suitable habitat present in the project site
Ahart's dwarf rush *(Juncus leiospermus* var. *ahartii)*	–	–	1B.2, SSHPC	Mesic areas in valley and foothill grassland. Species has an affinity for slight disturbance such as farmed fields (USFWS 2005a) (98'–751').	March–May	Potential – suitable habitat present in the project site
Red Bluff dwarf rush *(Juncus leiospermus* var. *leiospermus)*	–	–	1B.1, SSHCP	Vernally mesic areas in chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools (115'–4,101').	March–June	Potential – suitable habitat present in the project site
Red Hills soaproot *(Chlorogalum grandiflorum)*	–	–	1B.2	Serpentinite or gabbroic soils in chaparral, cismontane woodland, and lower montane coniferous forest, occasionally on non– ultramafic soils (804'–5,545').	May–June	Absent – no suitable habitat present in the project site
Stinkbells *(Fritillaria agrestis)*	--	--	4.2	Clay and sometimes serpentinite soils in chaparral, cismontane woodland, Pinyon and juniper woodland, and Valley and foothill grassland (33' - 5,102').	March–June	Low Potential – marginally suitable habitat present in the project site
Coast iris *(Iris longipetala)*	–	–	4.2	Mesic areas in coastal prairie, lower montane coniferous forest, and meadows and seeps (0'–1,969').	March–May	Absent – no suitable habitat present in the project site
Streambank spring beauty *(Claytonia parviflora ssp. grandiflora)*	–	–	4.2	Occurs in rocky cismontane woodland (820'–3,937').	February–May	Absent – project site is below the known elevational range of this species
Tuolumne Button–celery *(Eryngium pinnatisectum)*	–	–	1B.2	Vernal pools and other mesic conditions in cismontane woodland and lower montane coniferous forests (230'–3,002').	May–August	Absent – project site is below the known elevational range of this species
Pine Hill flannelbush *(Fremontodendron decumbens)*	FE	CR	1B.2	Serpentine or gabbro rock outcrops in chaparral and cismontane woodland (1,394'–2,493').	April–July	Absent – no suitable habitat present in the project site
Jepson's woolly sunflower *(Eriophyllum jepsonii)*	–	–	4.3	Chaparral, cismontane woodland, and coastal scrub, sometimes on serpentinite (656'–3,363').	April–June	Absent – no suitable habitat present in the project site

Common Name (Scientific Name)	ESA Status	CESA Status	Other	Habitat Description	Survey Period	Potential to Occur On-Site
Hogwallow starfish *(Hesperevax caulescens)*	–	–	4.2	Sometimes alkaline in mesic areas with clay soil within valley and foothill grassland and shallow vernal pools (0'–1,657').	March–June	Potential – suitable habitat present in the project site
Layne's ragwort (*Packera layneae*)	FT	CR	1B.2	Rocky serpentinite or gabbroic soil in chaparral and cismontane woodland communities (656'–3,560').	April–August	Absent – no suitable habitat present in the project site
El Dorado County mule ears *(Wyethia reticulata)*	–	–	1B.2	Clay or gabbroic soils in chaparral, cismontane woodland, and lower montane coniferous forest communities (607'–2,067').	April–August	Absent – no suitable habitat present in the project site
Parry's horkelia *(Horkelia parryi)*	–	–	1B.2	Ione and other soil formations in chaparral and cismontane woodlands (262'–3,510').	April–September	Absent – no suitable habitat present in the project site
Sanford's arrowhead *(Sagittaria sanfordii)*	–	–	1B.2, SSHCP	Shallow marshes and freshwater swamps (0'–2,133').	May–October	Potential – suitable habitat present in the project site
Dwarf downingia *(Downingia pusilla)*	–	–	2B.2, SSHCP	Mesic areas in valley and foothill grassland, and vernal pools. Species appears to have an affinity for slight disturbance (i.e., scraped depressions, ditches) (Jepson Flora Project [eds.] 2021; CDFW 2021) (3'–1,460').	March–May	Potential – suitable habitat present in the project site
Pine Hill ceanothus *(Ceanothus roderickii)*	FE	-	1B.1	Rocky serpentinite or gabbroic soil in chaparral and cismontane woodland (804'–3,576').	April–June	Absent – no suitable habitat present in the project site
Brandegee's clarkia *(Clarkia biloba ssp. brandegeeae)*	--	--	4.2	Chaparral, cismontane woodlands, and lower montane coniferous forest often along roadcuts (246' - 3,002')	May–July	Absent – project site is below the known elevational range of this species
El Dorado bedstraw *(Galium californicum* ssp. *sierrae)*	FE	CR	1B.2	Gabbroic soil in chaparral, cismontane woodland and lower montane coniferous forest communities (328'–1,919').	May–June	Absent – no suitable habitat present in the project site
Boggs Lake hedge–hyssop *(Gratiola heterosepala)*	–	CE	1B.2, SSHCP	Marshes, swamps, lake margins, and vernal pools (33'–7,792').	April–August	Potential – suitable habitat present in the project site

Common Name (Scientific Name)	ESA Status	CESA Status	Other	Habitat Description	Survey Period	Potential to Occur On-Site
Serpentine leptosiphon (*Leptosiphon ambiguus*)	–	–	4.2	Usually serpentinite soils in cismontane woodland, coastal scrub, and valley and foothill grassland.	March-June	Absent – Outside of known species range
Humboldt lily *(Lilium humboldtii* ssp. *humboldtii)*	–	–	4.2	Occurs in openings within chaparral, cismontane woodland, and lower montane coniferous forest (295'–4,199').	May–August	Low Potential – marginally suitable habitat present in the project site

Status Codes:

ESA: Endangered Species Act

- *FE: ESA Listed, Endangered*
- *FT ESA Listed, Threatened*
- *FPD: Listed under ESA, but formally proposed for delisting*
- *FC: Candidate for ESA Listing as Threatened or Endangered*
- *Delisted: Formally Delisted (delisted ESA species are monitored for 5 years)*

CESA: California Endangered Species Act

- *CFP: CFGC Fully Protected Species*
- *CE: CESA or NPPA listed, Endangered*
- *CT: CESA or NPPA listed, Threatened*
- *CC: Candidate for CESA listing as Endangered or Threatened*
- *BCC: USFWS Bird of Conservation Concern*
- *CDFW WL: CDFW Watch List*
- *SSC: Species of Special Concern*

California Rare Plant Ranks (CRPRs):

- *2: Rare or Endangered in California, more common elsewhere*
- *1B: Rare or Endangered in California and elsewhere*
- *2B: Rare or Endangered in California, more common elsewhere*
- *4: Plants of Limited Distribution – A Watch List*

Threat Rank:

- *1.1: Seriously threatened in California (over 80 percent of occurrences threatened / high degree and immediacy of threat)*
- *1.2: Moderately threatened in California (20 to 80 percent of occurrences threatened / moderate degree and immediacy of threat)*
- *1.3: Not very threatened in California (less than 20 percent of occurrences threatened / low degree and immediacy of threat or no current threats known)*

Plants

Special-status plant species that were identified as having the potential to occur in the project site based on the literature review are listed above in Table BR-3. However, upon further analysis and after the 2018 and 2021 site visits, a number of species were considered to be absent from the site due to the lack of suitable habitat or because the project site is outside the known range of the species. These species are indicated as having no potential to occur on the project in Table BR-3 above. No further discussion of these species is provided in this analysis. Brief descriptions of the 13 species that have the potential to occur within the project site are presented in the following sections.

Regulatory Setting

Federal

The two major federal laws regulating impacts to wetlands and wildlife species are the Clean Water Act (Section 404 and 401) and the Endangered Species Act (Section 7, 9, and 10). USACE is responsible for administering CWA, Section 404, with the U.S. Environmental Protection Agency serving in an oversight capacity. The U.S. Fish and Wildlife Service (USFWS) is responsible for administering the Federal Endangered Species Act (FESA), Sections 7, 9, and 10. The Regional Water Quality Control Board is the regulatory agency that enforces Section 401 of the CWA.

Clean Water Act Section 401 and 404 Permit Guidelines

The USACE regulates discharge of dredged or fill material into waters of the United States under Section 404 of the CWA. Waters of the U.S. are generally defined as “navigable waters,” which are defined as traditional navigable waters that are or were used for commerce, or may be used for interstate commerce; tributaries of navigable waters; wetlands adjacent to navigable waters, and intrastate lakes and ponds that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to other waters listed above (refer to 40 CFR § 120.2). “Discharge of fill material” is defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines [33 CFR §328.2(f)].

The RWQCB regulates wetlands pursuant to Section 401 of the CWA. Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

FEDERAL ENDANGERED SPECIES ACT

Under the FESA of 1973, the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as endangered or threatened. FESA defines "endangered" species as any species in danger of extinction throughout all or a significant portion of its range. A "threatened" species is any species that is likely to become an "endangered" species within the foreseeable future throughout all or a significant portion of its range. Additional special-status species include "candidate" species and "species of concern." "Candidate" species are those for which USFWS has enough information on file to propose listing as endangered or threatened, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. "Species of concern" are those for which listing is possibly appropriate but for which USFWS lacks sufficient information to support a listing proposal. A species that has been "delisted" is one whose population has met its recovery goal target and is no longer in jeopardy of extinction. Taking of federally listed species is prohibited under Section 9 of FESA. To "take" is defined by FESA (Section 2[19]) to mean "to harass, harm, pursue, hunt, shoot, would, kill, trap, capture, or collect, or attempt to engage in any such conduct."

All government agencies must review their actions and determine if a "may affect" situation occurs with respect to a federally listed or proposed species. If the agency makes a "may affect" determination, it is then required to formally consult with either the USFWS or National Oceanic and Atmospheric Administration, Fisheries (otherwise known as National Marine Fisheries Service, or NMFS).

For federal agencies, the consultation is conducted under Section 7 of FESA. The agency submits a Biological Assessment to USFWS or NMFS that evaluates the potential adverse effects to federally listed species. USFWS or NMFS then prepares a Biological Opinion that addresses the requirements that must be followed to avoid, minimize, and compensate for impacts to federally listed species and their habitats.

For non-federal agencies or individuals (i.e. private applicants), the consultation is conducted under Section 10 of FESA. The agency or individual submits an incidental take[4] permit application to USFWS accompanied by a habitat conservation plan (HCP). The purpose of the habitat conservation planning process associated with the permit is to ensure there is adequate minimization and mitigation of the effects of the authorized incidental take. The purpose of the permit is to authorize the incidental take of a listed species, not to authorize the activities that result in take (USFWS, 2005).

[4] Incidental take is take of listed fish or wildlife species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by a federal agency or applicant (50 CFR 402.2).

Further explanation is provided in the following notification, which was submitted to the County by USFWS for inclusion[5] into all environmental documents when threatened or endangered species may be adversely affected:

As a requirement of the Department of Interior, USFWS, the following notification is provided to proponents of any Project that has the potential to adversely affect threatened or endangered species:

"The applicant is hereby notified of additional conditions as stipulated by the U.S. Fish and Wildlife Service. Features of the applicant's Project may adversely affect federally listed threatened or endangered species. An applicant must go through one of two processes to obtain authorization to take federally listed species incidental to completing his or her Project. One of the processes is formal consultation. When the authorization or funding of a Federal agency is an aspect of a Project that may affect federally listed species, Section 7 of the Endangered Species Act requires the Federal agency to formally consult with the Service.

"Formal consultation is concluded when the Service issues a biological opinion to the Federal agency. The biological opinion includes terms and conditions to minimize the effect of take on listed species. The Federal agency must make the terms and conditions of the biological opinion into binding conditions of its own authorization to the Project applicant. An example of this process is when the U.S. Army Corps of Engineers consults with the Service prior to issuing a permit to fill jurisdictional waters under Section 404 of the Clean Water Act. The terms and conditions of the biological opinion become binding on the Project applicant through the Corps' 404 authorization. When no Federal funding or authorization is involved in a Project, an applicant must prepare a habitat conservation plan and obtain a permit directly from the Service in accordance with Section 10(a)(1)(B) of the Act. For additional information on these processes please contact the Endangered Species Division of the U.S. Fish and Wildlife Service's Sacramento Fish and Wildlife Office at (916) 414-6600."

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1916 established federal responsibilities for the protection of nearly all native species of birds, their eggs, and nests. Section 16 U.S.C. 703–712 of the Act states "unless and except as permitted by regulations, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill" a migratory bird. A migratory bird is any native species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle. Currently, there are 1,093 migratory birds protected nationwide by the MBTA, of which 58 are legal to hunt.

[5] As a condition of the USFWS Biological Opinion for the "Fazio Water" 101-514 water contract, the County of Sacramento has agreed to include Fish and Wildlife notification language in Initial Studies and EIRs when endangered and threatened species may be adversely affected.

Bald and Golden Eagle Protection Act, 16 U.S.C Section 668

The Bald and Golden Eagle Protection Act prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" (see 50 CFR 10.12 and 22.6) bald or golden eagles, including their parts (including feathers), nests, or eggs. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

State

California Environmental Quality Act, Public Resources Code Section 21000, et seq.

The CEQA requires public agencies undertaking discretionary actions to approve a project to first determine whether a project may have a significant effect on the environment, and then to prepare an environmental impact report if there is substantial evidence that the project may have a significant effect on the environment. Where an environmental impact report has been prepared, CEQA further requires public agencies to adopt findings with respect to each significant effect that "changes or alterations have been required in, or incorporated, into the project which mitigate or avoid the significant effects on the environment; that those changes are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency; or that specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report" (Public Resources Code Section 21081[a]).

California Endangered Species Act (CESA)

The CESA (established in Fish and Game Code §2050) generally parallels the main provisions of the FESA and is administered by CDFW for most terrestrial species, with assistance from NMFS for most freshwater fishery species. The CESA prohibits taking state listed species except as otherwise provided by state law. Unlike FESA, the CESA extends the take prohibitions to not only listed species but also for candidate species while CDFW reviews a listing petition it has accepted for consideration. "Take" is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Section 2081 of the CESA identifies the following criteria that must be met for CDFW to authorize the take of endangered, threatened or candidate species:

- The taking of a listed or candidate species can be minimized and fully mitigated.
- The take would not jeopardize the continued existence of the species.

Authorization for take must be based on the best scientific material that is reasonably available, and that due consideration will be given to the species' ability to survive and reproduce.

Porter-Cologne Water Quality Control Act, California Water Code Section 13000, et seq.

The Porter-Cologne Water Quality Control Act (State Water Code Section 13020) mandates that all the waters of the state be protected, that activities and factors affecting water quality be regulated to attain the highest water quality "within reason", and that the state be prepared to exercise its power and jurisdiction to protect water quality from degradation. Waters of the state are defined as any surface or groundwater within the boundaries of the state. The Regional Water Board issues permits, with varying conditions, to allow the discharge of dredge or fill material or a waiver of waste discharge into waters of the state. Through its issuance of waste discharge requirements, the Regional Water Board also regulates discharges to "isolated" water features which are not considered waters of the U.S. under the CWA.

Fully Protected Species, California Fish and Game Code Sections 3511, 4700, 5050, and 5515

These statutes prohibit take or possession at any time of fully protected species. CDFW has informed nonfederal agencies and private parties that they must avoid take of any fully protected species in carrying out projects.

Protection of Bird Nests and Raptors, California Fish and Game Code Section 3503

Section 3503 of the CFGC states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Typical violations include destruction of active nests because of tree removal and failure of nesting attempts, resulting in loss of eggs and/or young.

Protection of Non-Game Mammals, California Fish and Game Code Section 4150

CFGC Section 4150 states a mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a non-game mammal. A non-game mammal may not be taken or possessed under this code.

Native Plant Protection Act, California Fish and Game Code Sections 1900 et seq.

The purpose of the act is to preserve, protect, and enhance endangered or rare native plants of California. The act allows landowners to take listed plant species from (among other places) a canal, lateral ditch, building site, road, or other right-of-way, provided that the landowner first notifies CDFW and gives the agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed.

Lake and Streambed Alteration Program, California Fish and Game Code Section 1602

Fish and Game Code Section 1602 requires any person, State or local governmental agency, or public utility to notify CDFW before beginning any activity that will do one or more of the following: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state.

Notification is generally required for any project that will take place in the vicinity of a river, stream, or lake. CDFW will determine whether a Lake or Streambed Alteration Agreement is required for the activity. An agreement will be required if the activity could substantially adversely affect an existing fish and wildlife resource. If an agreement is required, it will be prepared by CDFW in coordination with the applicant. The agreement will include measures, as necessary, to protect fish and wildlife resources while conducting the project.

California Oak Woodlands Conservation Act and Oak Protection

The 2005 CFGC Sections 1360–1372 outline the terms and conditions comprising the California Oak Woodlands Conservation Act (OWCA). The OWCA mandates counties to require feasible and proportional habitat mitigation for impacts on oak woodlands as part of the CEQA review process. An oak woodland is defined as an oak stand with greater than 10% canopy cover comprised of native oak (*Quercus* spp.) trees with a diameter at breast height (dbh) greater than 5 inches, or an oak stand that may have historically supported greater than 10% canopy cover. The OWCA encourages and defers to local jurisdictions to develop and implement oak conservations plans developed under the OWCA (WCB, 2021).

Under Section 21083.4 of the Public Resources Code, each county is required to determine whether a project under its jurisdiction “may result in a conversion of oak woodlands that will have a significant effect on the environment.” The law applies to all oak woodlands, except those dominated by California black oak. Mitigation is required for any project that may have a significant effect on oak woodland and may be selected from several mitigation alternatives set forth in PRC Section 21083.4(b). However, only up to 50 percent of the required mitigation may be satisfied by planting of oaks.

Other State Tree Protection Regulations

Additional State laws that regulate and/or protect oaks and oak woodlands include the Professional Foresters Law, CEQA, and adopted regulations of the Board of Forestry and Fire Protection. The Professional Foresters Law addresses oak habitat evaluations. Both the Professional Foresters Law and CEQA apply to all local jurisdictions.

LOCAL

SACRAMENTO COUNTY GENERAL PLAN

The General Plan includes goals, policies, and implementation programs to protect environmental resources that are important elements in the quality of life of Sacramento County residents. The following are General Plan Conservation Element policies pertaining to biological and aquatic resources in Sacramento County that are most relevant to the proposed project.

CO-25: Support the preservation, restoration, and creation of riparian corridors, wetlands and buffer zones.

CO-58: Ensure no net loss of wetlands, riparian woodlands, and oak woodlands.

CO-59: Ensure mitigation occurs for any loss of or modification to the following types of acreage and habitat function.

- Vernal pools,
- Wetlands,
- Riparian,
- Native vegetative habitat, and
- Special status species habitat.

CO-60: Mitigation should be directed to lands identified on the Open Space Vision Diagram and associated component maps (please refer to the Open Space Element).

CO-61: Mitigation should be consistent with Sacramento County-adopted habitat conservation plans.

CO-62: Permanently protected land required as mitigation.

CO-66: Mitigation sites shall have a monitoring and management program including an adaptive management component including an established funding mechanism. The programs shall be consistent with Habitat Conservation Plans that have been adopted or are in draft format.

CO-115: Provide setbacks along stream corridors and stream channels to protect riparian habitat functions.

1. A functional setback of at least 100 feet and measured from the outside edge of the stream bank should be retained on each size of a stream corridor that prohibits development or agricultural activity. This buffer is necessary to protect riparian functions by allowing for the

filtering of sediment, pesticides, phosphorus and nitrogen, organic matter and other contaminates that are known to degrade water quality. This buffer also provides for the protection of vegetation along the stream bank which provides bank stability, erosion control and flood attenuation.

2. A transitional setback of at least 50 feet in width beyond the functional buffer should be retained along all stream corridors. This buffer is necessary to protect hydrogeomorphic functions that regulate water temperature, regulate microclimate, maintain channel complexity, and retain hydrologic flow regimes. This buffer also provides corridors to facilitate the movement of wildlife.

CO-138: Protect and preserve non-oak native trees along riparian areas if used by Swainson's hawk, as well as landmark and native oak trees measuring a minimum of 6 inches in diameter or 10 inches aggregate for multi-trunk trees at 4.5 feet above ground.

CO-139: Native trees other than oaks, which cannot be protected through development, shall be replaced with in-kind species in accordance with established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed.

CO-140: For projects involving native oak woodlands, oak savannah, or mixed riparian areas, ensure mitigation through either of the following methods:

1. An adopted habitat conservation plan;

2. Ensure no net loss of canopy area through a combination of the following: A -preserving the main, central portions of consolidated and isolated groves constituting the existing canopy; and B – provide an area on site to mitigate any canopy lost. Native oak mitigation area must be a contiguous area on site which is equal to the size of canopy area lost and shall be adjacent to existing oak canopy to ensure opportunities for regeneration;

3. Removal of native oaks shall be compensated with native oak species with a minimum of a one to one dbh replacement;

4. A provision for a comparable on-site area for the propagation of oak trees may substitute for replacement tree planting requirements at the discretion of the Sacramento County Tree Coordinator when removal of a mature oak tree is necessary;

5. If on-site mitigation is not possible given site limitations, off-site mitigation may be considered. Such a mitigation area must meet all the following criteria to preserve, enhance, and maintain a natural woodland habitat in perpetuity, preferably by transfer of title to an appropriate public entity. Protected woodland habitat could be used as

a suitable site for replacement tree plantings required by ordinances or other mitigations.

a. Equal or greater in area to the total area that is included within a radius of 30 feet of the dripline of all trees to be removed;

b. Adjacent to protected stream corridor or other preserved natural areas;

c. Supports a significant number of native broadleaf trees; and

d. Offers good potential for continued regeneration of an integrated woodland community.

CO-141: In 15 years, the native oak canopy within on-site mitigation areas shall be 50 percent canopy coverage for valley oak and 30 percent canopy coverage for blue oak and other native oaks.

Swainson's Hawk Impact Mitigation Fee Ordinance

In 1997, in response to the need to mitigate for the loss of Swainson's hawk foraging habitat in Sacramento County, the Board of Supervisors adopted an ordinance that established a Swainson's Hawk Impact Mitigation Program (Sacramento County Code Chapter 16.130 *Swainson's Hawk Impact Mitigation Fees*). Under the Swainson's Hawk Impact Mitigation Program, only projects which have a permanent impact of less than 40 acres are eligible to pay fees. Projects impacting 40 acres or more of foraging habitat must provide compensatory land acceptable to CDFW and the County.

Sacramento County Tree Preservation and Protection Ordinance (Code Section 19.12)

Code Section 19.12, Tree Preservation and Protection Ordinance, establishes standards to protect and preserve native oak trees and other significant trees within Sacramento County. The ordinance recognizes the historical, ecological, and aesthetic value of these trees and aims to prevent their unnecessary removal, promote environmental health, and maintain scenic qualities. It requires permits for activities such as removal, pruning, or construction near protected trees. Protected trees include native oaks, sycamores, bay, walnut, and "landmark" trees.

South Sacramento Habitat Conservation Plan (SSHCP)

The SSHCP provides a framework to improve conservation of natural resources, including endangered species habitat, while streamlining the permitting process for planned development, infrastructure, and maintenance activities. The SSHCP provides take authorization for 28 Covered Species with potential to occur in the Plan Area and includes conservation actions to protect all 28 Covered Species whether they are currently listed or not. The SSHCP plans to establish an interconnected preserve system that supplements, complements, and links together existing preserves in the Plan Area. The SSHCP Permit term is 50 years. The Plan Area is divided into the area

within the urban development area (UDA), where all proposed urbanization will occur and some preserves will be established, and the area outside the UDA. Most preservation associated with the SSHCP, approximately 27,554 acres, will occur outside of the UDA with the intent to protect agricultural lands, as well as habitat for Covered Species. Only limited development activities (i.e., infrastructure) are covered by the SSHCP in areas outside the UDA. The SSHCP conservation strategy divides the Plan Area into 8 planned preserve units (PPUs) that provide geographic representation across the preserve system and that each contains important Covered Species Resources targeted for preservation. Although the project area is outside the SSHCP boundary (and therefore not covered under the SSHCP), the conveyor is within the UDA of the SSHCP and would be considered a covered activity under the SSHCP.

Significance Criteria and Methodology

Significance Criteria

Standards for determining thresholds of significance were established based on the State CEQA Guidelines and professional standards. Impacts to biological resources were considered significant if the project would result in the following:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations or by CDFW or USFWS;

2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plan, policies, regulations, or by the CDFW or USFWS.

3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, costal, etc.) through direct removal, filling, hydrological interruption, or other means;

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

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

6. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or approved local, regional, or state habitat conservation plan.

Methodology

The methodologies used to determine significance rely on documents published by or endorsed by regulatory agencies. The applicable documents and methods are cited and

described in the applicable impact discussions below. In absence of such published documents, the analyses rely on the general definitions of significance. In addition, technical reports were prepared for the proposed project, as follows:

Technical Reports

The following technical reports were utilized to support the analysis contained in this chapter:

- Appendix BR-1: Biological Resources Assessment, Granite White Rock North Mine Project, ECORP Consulting, Inc, April 8, 2021.
- Appendix BR-2: Oak Tree Inventory Survey Report, Granite White Rock North Mine Project, ECORP Consulting, Inc, April 8, 2021.
- Appendix BR-3: Aquatic Resources Delineation, Granite White Rock North Mine Project, ECORP Consulting, Inc, April 8, 2021.

Desktop Surveys

Prior to conducting the field portion of the assessment for Appendix BR-1, the following species lists were queried to determine the special-status species that had been documented within or in the vicinity of the site:

- CDFW CNDDB for the "Buffalo Creek, California," “Folsom, California,” and surrounding 12 7.5-minute USGS quadrangles (CDFW, 2021).
- USFWS Resource Report List Federal Endangered and Threatened Species that may be affected by work conducted in the project site (USFWS, 2021a).
- CNPS electronic Inventory of Rare and Endangered Plants of California for the Buffalo Creek, California," “Folsom, California,” and surrounding 12 7.5-minute USGS quadrangles (CNPS, 2021).

Additional background information was reviewed regarding the documented or potential occurrence of special-status species within or near the site from the following sources:

- The Status of Rare, Threatened, and Endangered Plants and Animals of California 2000-2004 (California Department of Fish and Game [CDFG], 2005).
- California Bird SSC (Shuford and Gardali, 2008).
- Amphibian and Reptile SSC in California (Thompson et al., 2016).
- Mammalian SSC in California (Williams, 1986).
- California’s Wildlife, Volumes I-III (Zeiner, et al. 1988, 1990a, 1990b).

- A Guide to Wildlife Habitats of California (Mayer and Laudenslayer Jr., eds. 1988.

- Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS, 2021a).

FIELD SURVEYS

Over the late summer and early fall of 2018 and January 2021, ECORP biologists conducted a number of specific field efforts within the project site that informed the result contained in Appendices BR-1 and BR-2. The project site was systematically surveyed on foot using a Global Positioning System unit with sub-meter accuracy, topographic maps, and aerial imagery to ensure total site coverage for these survey efforts. The surveys included the following:

a) aquatic resources delineation;

b) elderberry mapping and focused valley elderberry longhorn beetle (VELB) surveys;

c) oak tree mapping; and

d) general site reconnaissance to support the biological resources analysis.

During the general site reconnaissance, special attention was given to those portions of the site with the potential to support special-status species and sensitive habitats. The following biological information was collected:

- vegetation communities and land cover types;

- plant and animal species directly observed;

- animal evidence;

- active bird nests; and

- burrows and any other special habitat features

In addition, soil types were identified using the NRCS Web Soil Survey (NRCS, 2021a), and wetland designation were provided from the National Wetland Inventory (USFWS, 2021b).

IMPACTS AND ANALYSIS

IMPACT BR-1: WOULD THE PROJECT HAVE A SUBSTANTIAL ADVERSE EFFECT, EITHER DIRECTLY OR THROUGH HABITAT MODIFICATIONS, ON ANY

Species Identified as a Candidate, Sensitive, or Special Status Species in Local or Regional Plans, Policies, or Regulations or by CDFW or USFWS

Details regarding species-specific impacts are described in the species-specific subsections included below. Collectively, impacts on special-status species resulting from project construction, operations and maintenance activities, and decommissioning would be ***potentially significant***.

To avoid and minimize general construction-related impacts on special-status plants and wildlife, the general avoidance and minimization measures (AMMs) outlined in Mitigation Measure BR-1a shall be implemented during project implementation.

A species-specific impact analysis and identification of required mitigation are provided in the following sections.

Special Status Plants

Based on the technical analyses and field surveys conducted for the project, the following 13 special status plants have the potential to occur on the project site as outlined in Table BR-3 above: Hispid bird's-beak, dwarf downingia, Boggs Lake hedge-hyssop, Hogwallow starfish, Ahart's dwarf rush, Red Bluff dwarf rush, legenere, hoary navarretia, pincushion navarretia, adobe navarretia, slender orcutt grass, Sacramento orcutt grass, and Sanford's arrowhead. The potential loss of any known special-status plant occurrence during implementation of the project would be considered a ***potentially significant*** impact.

To reduce impacts to special status plants to less than significant, Mitigation Measure BR-1b shall be implemented as part of the project. Mitigation consists of conducting a rare plant survey and avoiding special-status species where feasible; and, if avoidance is not feasible, implementing salvage and relocation of the plants. With the implementation of these mitigation measures, the impact on special status plants would be ***less than significant with mitigation***.

Special Status Wildlife Species

Invertebrates

There are a variety of invertebrate species which rely on vernal pools and similar seasonal wetland habitat. Species associated with vernal pools include California linderiella, midvalley fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, and Ricksecker's water scavenger beetle. Linderiella, midvalley fairy shrimp and Ricksecker's water scavenger beetle are not special status species (midvalley fairy shrimp and Ricksecker's water scavenger beetle are covered by the SSHCP) but are typically found in the same habitats as special status vernal pool species. All of these species spend their life cycle within the margins of the vernal pool. None of these species are readily observed through casual observation. Thus, lack of recorded sightings is not cause to conclude that the species is not present. If suitable habitat is

present, the species should be assumed to be present unless surveys have found the species to be absent. Discussion of the California linderiella, midvalley fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp are grouped under the heading of Vernal Pool Crustaceans, because the survey protocols and mitigation requirements are applied to all four species.

VERNAL POOL CRUSTACEANS

According to the Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (vernal pool recovery plan)[6], vernal pool fairy shrimp, and vernal pool tadpole shrimp use the same habitat types. The shrimp feed on algae, bacteria, protozoa, rotifers and bits of detritus. The females carry their eggs in a ventral brood sac until they are dropped to the bottom of the pool, or the mother dies and sinks. At the end of the rainy season, as the pool dries up, the eggs remain in a dormant stage in the dried pool until the rains of the next season, or other environmental stimuli cause them to hatch. Cysts will hatch when the pool refills, although not all cysts present will hatch during the following rainy season, and they may remain dormant in the soil for multiple seasons.

Survey requirements and mitigation protocols published by USFWS ("Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods" published April 19, 1996 and the Programmatic Formal Endangered Species Act Consultation published on February 28, 1996) are required by USFWS for the two species listed under the ESA: vernal pool fairy shrimp and vernal pool tadpole shrimp. Surveys to determine presence or absence of the species must include either 2 years of wet season surveys completed within a 5-year period or consecutive wet season and dry season surveys. In the absence of surveys, presence should be assumed.

A USFWS programmatic consultation was published for vernal pool fairy shrimp and vernal pool tadpole shrimp on February 28, 1996. Programmatic consultation can only be used by projects involving a maximum impact of one acre; all other projects must be individually permitted through the USACE and the USFWS, but it is reasonable to assume that vernal pool avoidance and mitigation requirements developed during the individual permitting process would be similar to those found in the programmatic consultation.

Vernal pool habitats may be subject to either direct or indirect impacts. Indirect impacts may be caused because development in proximity of a vernal pool could deliver runoff polluted with urban contaminants and introduce non-native species associated with development landscaping. Development may also reduce the size of the watershed which supports the vernal pool, by diverting runoff which once went into the vernal pool into a storm drainage system. This watershed reduction could cause a reduction in the depth and/or duration of ponding. Shorter inundation durations may mean a change in

[6] United States Fish and Wildlife Service, "Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon", December 2005.

pool temperature, depth, and pH. Features that may have been utilized by species that required specific inundation durations for the completion of breeding cycles may no longer provide suitable habitat. The programmatic consultation indicates that all habitats within 250 feet of proposed development may be subject to indirect impacts. Thus, all development must occur a minimum of 250 feet from the margin of any vernal pool in order to achieve total avoidance of impacts, unless a lesser buffer is approved by USFWS.

A direct impact is the filling or excavation of a vernal pool. Programmatic consultation specifies that if filling or excavation occurs within any portion of a vernal pool, the entire vernal pool should be considered directly impacted. Programmatic consultation also indicates that mitigation for direct impacts (removal of wetlands) requires both preservation of existing wetlands and creation of wetlands, at ratios that vary depending on whether the mitigation bank credits are at banks approved by USFWS (2:1 and 1:1 preservation and creation at approved banks, and 3:1 and 2:1 preservation and creation at non-approved banks). Encroachment within the 250-foot buffer requires 2:1 preservation mitigation.

VERNAL POOL FAIRY SHIMP

The vernal pool fairy shrimp (*Branchinecta lynchi*) is listed as threatened in accordance with the federal ESA. Vernal pool fairy shrimp may occur in seasonal ponds, vernal pools, and swales during the wet season, which generally occurs from December through May. Vernal pool fairy shrimp occur in disjunct patches dispersed across California's Central Valley.

VERNAL POOL TADPOLE SHRIMP

The vernal pool tadpole shrimp (*Lepidurus packardi*) is listed as endangered pursuant to the federal ESA. Vernal pool tadpole shrimp are distinguished from other vernal pool branchiopods discussed in this report by a large, shield like carapace that covers the anterior half of their body (USFWS, 2003). Cysts hatch during the wet season and the shrimp reach maturity in a few weeks. Data suggests that vernal pool tadpole shrimp require pools with relatively long periods of inundation to establish a population. The geographic range of vernal pool tadpole shrimp extends from Shasta County to northern Tulare County in California's Central Valley, and in the central coast range from Solano County to Alameda County (USFWS, 2003).

PROJECT IMPACTS

There are 17 documented occurrences of vernal pool fairy shrimp within five miles of the project site (CDFW, 2021). There are 27 documented occurrences of vernal pool tadpole shrimp within five miles of the project site (CDFW, 2021). The project site does not contain vernal pools, but vernal pool fairy shrimp and vernal pool tadpole shrimp have potential to occur within the seasonal wetlands and seasonal wetland swales on the project site.

The project site contains 6.204 acres of seasonal wetlands and 1.019 acres of seasonal wetland swales. Any impact to vernal pool fairy shrimp or vernal pool tadpole shrimp or

their potential habitats would be considered a ***potentially significant*** impact. With the exception of the culvert crossing, the project proposes to avoid the waters onsite, but encroachment within 250 feet of jurisdictional waters could result in indirect impacts to vernal pool crustaceans, if present. Site specific surveys have not been conducted for vernal pool crustaceans, therefore, crustaceans are assumed present.

To reduce impacts to these species to be less than significant, Mitigation Measure BR-1c shall be implemented as part of the project. Mitigation consists of avoidance of vernal pool crustacean habitat through implementation of appropriate buffers and/or implementation of permit requirements that would be implemented through consultation with USFWS. Direct impacts to waters are less than 0.1 acres, so the project is not expected to adversely impact vernal pools species. Impacts to vernal pool crustaceans are ***less than significant with mitigation.***

INSECTS

VALLEY ELDERBERRY LONGHORN BEETLE

The following discussion is based on the Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle[7] (Conservation Guidelines). The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), referred to as VELB for the remainder of the discussion is federally-listed as threatened. VELB is completely dependent on its host plant, elderberry (*Sambucus* species), which is a common component of the remaining riparian forests and adjacent upland habitats of the Central Valley. In non-riparian settings, elderberries occur solitarily or in groups in oak woodlands and annual grasslands. The adult-stage of the species is short-lived, so the majority of the species' life is spent in larval form within the stem of an elderberry plant. Adults emerge from late March through June, at around the same time as the elderberry produces flowers. This leaves an exit hole in the stem of the plant, which is often the only exterior evidence of the plant's use by the beetle. Upon emergence, VELB typically stay within the local shrub clump with average distances ranging from 65 to 165 feet. Distances between occupied clumps range from 656 to 2,625 feet.

The Conservation Guidelines encourage the avoidance of riparian habitat or elderberry shrubs whenever possible. Since the dispersal of VELB is generally limited, guidance suggests surveying for elderberry shrubs on and extending 165 feet from the project limits. If elderberry shrubs are present then the impact analysis will be guided by whether or not the project is within riparian or non-riparian habitat. In riparian habitats the shrubs are considered suitable habitat which are likely occupied. In non-riparian habitats the shrubs are evaluated for exit holes. If there are no exit holes, the surrounding area is evaluated for: VELB occurrences up to 2,625 feet, nearby habitat

[7] United Stated Fish and Wildlife Service. 2017. "Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)". U.S. Fish and Wildlife Service; Sacramento, CA. 28 pp.

and historical habitat. The Conservation Guidelines direct applicants to discuss their assessments of VELB habitat and likely impacts with the USFWS.

Projects that may impact VELB or its habitat should implement appropriate avoidance and minimization measures. The Conservation Guidelines indicate that not all measures are appropriate for every project and that the applicant should coordinate with the USFWS. The minimization measures include: fencing and flagging close to construction limits, training contractors and employees about the need to avoid the plants, posting signs along the edge of the avoidance area with a standardized message about avoiding impacts, construction outside of emergence window (March – July), and pruning shrubs in winter and limiting such pruning to stems no larger than one inch in diameter. Minimum restoration activities include revegetating disturbed areas with native plants, protection of the buffered area from post-construction impacts (establishment of fencing, signs, weeding, and trash removal), prohibition on the use of pesticides or fertilizers within the buffer, and restrictions on grass mowing (for fire hazard reduction).

The Conservation Guidelines indicate that, unless USFWS exempts a project from the requirement, all elderberry plants with one or more stems measuring 1.0 inch or greater in diameter at ground level which cannot be avoided should be transplanted to a conservation area. A list of guidelines for transplanting elderberry shrubs and trees is included which specifies that transplantation must occur during dormancy (November through the first two weeks of February) and that a biological monitor must be present. Detailed instructions for appropriate transplantation are also included. For unavoidable impacts to VELB or its habitat, compensatory mitigation is recommended. Compensation is calculated in Table BR-4 below. In order to fulfill mitigation requirements, applicants can purchase credits at a USFWS approved conservation bank, provide on-site mitigation, or establish and/or protect habitat for VELB.

Table BR-4: Mitigation Ratios for VELB Impacts

Compensation Level	Habitat Type	Habitat Compensation Ratio	If the Entire Shrub will be Removed
Habitat Level[1]	Riparian	3:1	--
Habitat Level[1]	Non-Riparian	1:1	--
Shrub-Level Impact[2]	Riparian	2:1	Transplant plus 2:1 compensation
Shrub-Level Impact[2]	Non-Riparian (exit holes present)	1:1	Transplant plus 1:1 compensation

Notes:

1. *Acre(s) of credits: acre(s) of disturbance; one credit (unit) = 1,800 square feet*
2. *Number of credits: number of shrubs trimmed*

PROJECT IMPACTS

There are 10 documented occurrences of VELB within five miles of the project site (CDFW, 2021b), and VELB are known to occur within the Aerojet campus. VELB evidence (exit holes) was found within the project site while conducting field surveys for the project. Table BR-5 outlines the total inventoried elderberry plants within the project

boundaries, including the number of plants with and without exit holes, as well as an inventory of the number of elderberry plants that occur within the limits of grading.

Project implementation would result in the removal and encroachment of elderberry shrubs as outlined in impacts within the grading area in Table BR-5. The field surveys conducted to date have not identified any occupied shrubs within the proposed limits of grading. However, a number of elderberry shrubs within the grading limits have not been surveyed due to being inaccessible at the time, therefore occupied shrubs could be impacted and/or subject to encroachment or trimming during mining activities. Any impact to valley elderberry longhorn beetle, or potentially occupied habitat for this species (e.g., elderberry shrubs with bore/exit holes present) would be considered a ***potentially significant impact***.

Published guidance from USFWS indicates that any project that occurs in suitable habitat should compensate for that loss in proportion to the total amount of habitat that will be disturbed as a result of project implementation. The acreage of habitat lost can be assessed based on all permanent surface disturbance including access routes and staging areas. According to the Conservation Guidelines, habitat or shrub compensation is required at a ratio of 1:1. Mitigation is recommended to incorporate the USFWS recommended avoidance and minimization measures and to complete consultation with the USFWS to determine the final compensation ratio for the project. To reduce impacts to valley elderberry longhorn beetle and its habitat to less than significant, Mitigation Measure BR-1d shall be implemented as part of the project. Impacts to VELB would be ***less than significant with mitigation.***

Table BR-5: Elderberry Summary

	Phase 1 Shrub Count	**Phase 2 Shrub Count**	**Phase 3 Shrub Count**	**All Phases (1-3) Shrub Count**
Inside Limits of Grading	**148**	**62**	**6**	**216**
Occupied	0	0	0	0
Unoccupied	109	57	4	170
Other (inaccessible shrub)	39	5	2	546
Outside Limits of Grading	**1,062**	**464**	**375**	**1,901**
Occupied	8	14	11	33
Unoccupied	231	111	37	379
Other (inaccessible or not surveyed shrub)	823	339	327	1,489
Total:	**1,210**	**526**	**381**	**2,117**

CROTCH'S BUMBLE BEE

Crotch's bumble bee is a candidate for listing as endangered by the state of California. This species has a relatively limited distribution, occurring primarily in California and northern Baja California, Mexico. Although now absent from much of its historical range, in California, Crotch's bumble bee occurred on the Pacific Coast and in the western desert, Central Valley, and adjacent foothills (Williams et al. 2014:114–116, 132).

Crotch's bumble bee inhabits open grasslands and scrub habitats commonly associated with the plants in Asclepiadaceae, Compositae (Asteraceae), Hydrophyllaceae, Labiatae (Laminaceae) and Leguminosae (Fabaceae). Crotch's bumble bee is a generalist forager that feeds on a variety of widely distributed plant genera including *Antirrhinum, Asclepias, Phacelia, Chaenactis, Clarkia, Dendromecon, Eriogonum, Eschscholzia, Lupinus, Medicago,* and *Salvia* (Koch et al., 2012:82, Williams et al., 2014:132). These floral associations and suitable overwintering habitat can be found in most landcover types of the biological study area, however; valley oak woodland, annual grassland, valley oak savannah, and riparian scrub are most suitable.

PROJECT IMPACTS

Nesting, foraging, and overwintering habitat for Crotch's bumble bee exists in the project area. Disturbance of food and nectar resources in the nesting season and surface or subsurface disruption of the ground and vegetation removal during nesting and overwintering may negatively impact bumble bees and have the potential to result in take. Surface or subsurface disturbance can negatively affect bumble bee colonies in the spring or overwintering queens in leaf litter and duff (Xerces, 2018). The potential destruction of nest sites or queen overwintering sites would be considered a ***potentially significant*** impact.

To protect bumble bee populations, mitigation (Mitigation Measure BR-1n) would require that before any soil disturbance or vegetation clearing, a pre-construction survey will be conducted to identify any bumble bee nests on site and determine avoidance. Mitigation will also provide guidance on vegetation removal and soil disturbance strategies and timing, as well as plant genera known to be Crotch's bumble bee food sources to be used during restoration. Impacts to bumble bee species due to surface disturbances and vegetation removal are considered ***less than significant with mitigation.***

AMPHIBIANS

WESTERN SPADEFOOT

The western spadefoot occurs in shallow, seasonal wetlands in valley and foothill habitats such as grasslands, open chaparral, sage scrubland, short-grass plains, and pine woodlands. Spadefoot occur in both grazed and ungrazed habitat. Adult spadefoot occupy burrows up to three feet in depth in upland habitat during dry periods to avoid desiccation. Individuals may remain in these burrows for eight to nine months. Most surface activity is nocturnal. The spadefoot leaves their upland burrows for wetlands during the breeding season, which lasts from January to August, depending on rainfall.

It appears that vernal pools and other temporary wetlands may be optimal for breeding due to the absence or reduced abundance of both native and nonnative predators (bullfrogs, fish, and crawfish), many of which require more permanent water sources. Current research on amphibian conservation suggests that average habitat utilization falls within 1,200 feet of aquatic habitats[8].

According to the Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon, the western spadefoot was added as a Species of Special Concern in 2004. Western spadefoot has been observed in several counties across the state, and a number of sites with suitable habitat for western spadefoot are already being protected through National Wildlife Refuges, National Monuments, State Parks, State Ecological Reserves, private preserves, mitigation banks, and conservation easements. Additionally, 23 vernal pool species are federally protected; preservation efforts for those species and associated habitats will contribute to the conservation of the western spadefoot.

PROJECT IMPACTS

There are six documented occurrences of western spadefoot within five miles of the project site (CDFW, 2021), and Western spadefoot has potential to occur on the project site within wetlands and waters and associated upland habitat. Mining activities and use of heavy equipment within Western spadefoot habitat would create a ***potentially significant*** impact to Western spadefoot.

Mitigation Measure BR-1e is included to address potential impacts to individual Western spadefoot that may be located on the project site, which includes specified work windows, avoidance and minimization measures, and preconstruction surveys. While a localized population of the western spadefoot may be temporarily reduced through mining of the project site until reclamation is complete, the regional population would not be significantly impacted because of regional conservation efforts and because 1:1 mitigation for wetland habitat is required in Sacramento County. Locally, conservation lands provide habitat for the western spadefoot. Mitigation is already required for project impacts to wetland resources, and no additional mitigation is required in order to avoid significant impacts to the species; impacts are ***less than significant with mitigation.***

REPTILES

NORTHWESTERN POND TURTLE

The western pond turtle)[9], is listed as a California Species of Special Concern by CDFW. According to the Fish and Wildlife Life History Account for the species, the

[8] United States Fish and Wildlife Service, 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. Portland, Oregon.

[9] The western pond turtle was identified as being comprised of two subspecies, one of which was the northwestern pond turtle (*Clemmys marmorata marmorata*). It is still listed as such in the Fish and Game Life History Account, as the account was written in 1994; however, the current special animals list clarifies

western pond turtle is an aquatic turtle that usually leaves the aquatic site to reproduce, to aestivate, or to overwinter. Western pond turtles require some slack- or slow-water aquatic habitat. High-gradient streams with minimal cover or basking habitat are not suitable. In pond environments the species typically only leaves the water to reproduce, whereas in stream environments the turtles more commonly leave the water to aestivate or overwinter, in addition to leaving for reproduction. Turtles leave the water to overwinter in October or November and typically become active in March or April. Mating typically occurs in late April or early May, but may occur year-round. Most egg-laying occurs in May or June, but may occur as early as April, or as late as August. The hatchlings remain in the nest over the winter and emerge in the spring. Suitable nesting locations have dry soils (usually in a substrate with a high clay or silt fraction), on a slope that is unshaded and may be at least partially south-facing. The nest site can be up to 1,300 feet from the aquatic habitat, but it is more typical for the nest to be within 650 feet of aquatic habitat. The Life History Account conservatively recommends a buffer of 1,650 feet to ensure that neither adults nor nests will be impacted.

PROJECT IMPACTS

There are seven documented occurrences of western pond turtle within five miles of the project site (CDFW, 2021). Western pond turtle was observed within the aquatic features on the project site during the 2018 site reconnaissance surveys and is considered present on the project site. Project construction, and operations could result in injury/ mortality (including in aestivation sites) and/or loss of nests, if this species is present in suitable habitat within the mining area in suitable habitat on-site, similar to that described above for western spadefoot. Potential injury to or mortality of this species would be considered a ***potentially significant*** impact.

The CDFW has not published mitigation or other regulatory guidance for the treatment of impacts to this species. As a result, mitigation is focused on preventing construction activities from resulting in direct mortality of a western pond turtle. The project proponent will be required to perform surveys 24-hours prior to ground-disturbing activity to ensure that there are no western pond turtles within or near the construction area. Mitigation Measure BR-1f will ensure that no turtles are impacted during project construction. Through implementation of the mitigation measure below, impacts to western pond turtle would be ***less than significant with mitigation.***

BIRDS

SWAINSON'S HAWK

The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species by the State of California and is a candidate for federal listing as threatened or endangered. It is a migratory raptor typically nesting in or near valley floor riparian habitats during spring and summer months. Swainson's hawks were once common throughout the state, but

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that subsequent research has shown that the subspecies designations were not warranted, and the western pond turtle is now tracked only by species, not subspecies.

various habitat changes, including the loss of nesting habitat (trees) and the loss of foraging habitat through the conversion of native Central Valley grasslands to certain incompatible agricultural and urban uses has caused an estimated 90% decline in their population.

Swainson's hawks feed primarily upon small mammals, birds, and insects. Their typical foraging habitat includes native grasslands, alfalfa, and other hay crops that provide suitable habitat for small mammals. Certain other row crops and open habitats also provide some foraging habitat. The availability of productive foraging habitat near a Swainson's hawk nest site is a critical requirement for nesting and fledgling success. In central California, about 85% of Swainson's hawk nests are within riparian forest or remnant riparian trees. CEQA analysis of impacts to Swainson's hawks consists of separate analyses of impacts to nesting habitat and foraging habitat.

The CEQA analysis provides a means by which to ascertain impacts to the Swainson's hawk. When the analysis identifies impacts, mitigation measures are established that will reduce impacts to the species to a less than significant level. Project proponents are cautioned that the mitigation measures are designed to reduce impacts and do not constitute an incidental take permit under the California Endangered Species Act (CESA). Anyone who directly or incidentally takes a Swainson's hawk, even when in compliance with mitigation measures established pursuant to CEQA, may violate the California Endangered Species Act.

NESTING HABITAT IMPACT METHODOLOGY

For determining impacts to and establishing mitigation for nesting Swainson's hawks in Sacramento County, CDFW recommends utilizing the methodology set forth in the Recommended Timing and Methodology for Swainson's Hawk nesting Surveys in California's Central Valley (Swainson's Hawk TAC, 2000). The document recommends that surveys be conducted for the two survey periods immediately prior to the **start of construction**. The five survey periods are defined by the timing of migration, courtship, and nesting in a typical year (refer to Table BR-6). Surveys should be extended a ½-mile radius around all project activities, and if active nesting is identified, CDFW should be contacted.

Table BR-6: Recommended Survey Periods for Swainson's Hawk (TAC 2000)

Period No.	Timeframe	No. of Surveys Required	Notes
I.	Jan. 1 – Mar. 20	1	Optional, but recommended
II.	Mar. 20 – Apr. 5	3	
III.	Apr. 5 – Apr. 20	3	
IV.	Apr. 21 – June 10	N/A	Initiating surveys is not recommended during this period
V.	June 10 – July 30	3	

For example, if a project is scheduled to begin on June 20, three surveys should be completed in Period III and three surveys in Period V, as surveys should not be initiated in Period IV. It is always recommended that surveys be completed in Periods II, III, and V.

PROJECT IMPACTS

There are five documented occurrences of Swainson's hawk within five miles of the project site (CDFW, 2021). There is suitable nesting habitat for Swainson's hawk within the project site; therefore, the species has potential to occur onsite. Ground disturbing activities associated with project implementation has the potential to impact nesting Swainson's hawk if present. Surveys are required through mitigation to reduce impacts to nesting Swainson's hawk. The purpose of the survey requirement is to ensure that construction activities do not agitate nesting hawks, potentially resulting in nest abandonment or other harm to nesting success. If Swainson's hawk nests are found, the developer is required to contact CDFW to determine what measures need to be implemented in order to ensure that nesting hawks remain undisturbed. The measures selected will depend on many variables, including the distance of activities from the nest, the types of activities, and whether the landform between the nest and activities provides any kind of natural screening. According to the "Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California" (CDFW, 1994), Mitigation Measure BR-1g described below will ensure that impacts to nesting Swainson's hawk will be ***less than significant with mitigation.***

FORAGING HABITAT IMPACT METHODOLOGY

Swainson's hawks are known to forage up to 18 miles from their nest site; however, that is the extreme range of one individual bird's daily movement. It is more common for a Swainson's hawk to forage within 10 miles of its nest-site. Therefore, it is generally accepted and California Fish and Wildlife recommends evaluating projects for foraging habitat impacts when they are within 10 miles of a known nest site. Virtually all of Sacramento County is within 10 miles of a known nest.

Statewide, California Fish and Wildlife recommends implementing the measures set forth in the California Fish and Wildlife "Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California" (CDFW, 1994) for determining impacts to Swainson's hawk foraging habitat unless local jurisdictions develop an individualized methodology designed specifically for their location.

Sacramento County has developed such a methodology and received confirmation from CDFW in May of 2006 that the methodology is a better fit for unincorporated Sacramento County and should replace the statewide, generalized methodology for determining impacts to foraging habitat.

Swainson's hawk foraging habitat value is greater in large expansive open space and agricultural areas than in areas which have been fragmented by agricultural-residential or urban development. The methodology for unincorporated Sacramento County is based on the concept that impacts to Swainson's hawk foraging habitat occur as properties develop to increasingly more intensive uses on smaller minimum parcel sizes. As part of methodology development, County and CDFW staff analyzed aerial photography of the County and compared this to the underlying zoning. It was determined that there was a strong correlation in most areas between the presence of suitable habitat and zoning for large agricultural parcels, and conversely that areas zoned for agricultural-residential or more dense uses tended to have fragmented or absent habitat. Therefore, the methodology relies mainly on the minimum parcel size allowed by zoning to determine habitat value. Exceptions include Rio Linda/Elverta and the Rancho Murieta areas, in which this methodology does not apply because there are very large parcels with high-quality habitat which are zoned A-2 or similar. Though there may be individual properties which do not follow the observed regional trend, it was concluded that adherence to this methodology would result in adequate cumulative mitigation for the species.

For the purpose of the methodology, properties with zoning of AG-40 and larger are assumed to maintain 100% of their foraging habitat value and properties with AR-5 zoning and smaller are assumed to have lost all foraging habitat value. Table BR-7 below illustrates the continuum between AG-40 and AR-5 that represents the partial loss of habitat value that occurs with fragmentation of large agricultural land holdings. The large, 50% loss of habitat value between AG-20 and AR-10 is due to the change in land use from general agriculture to agricultural-residential. The methodology does allow case-by-case analysis for projects with unique characteristics.

Table BR-7: Swainson's Hawk Foraging Habitat Value by Zoning Category

Zoning Category	Habitat Value Remaining
AG-40 and above (e.g., AG-80, 160, etc.)	100%
AG-20	75%
AR-10	25%
AR-5 and smaller (e.g., AR-2, 1 or RD-5, 7, 10, 15, 20, etc.)	0%

The project site is located within the Aerojet SPA industrial zone. As such, past uses have been industrial in nature, and allowable uses consistent with the SPA also consist of industrial uses that do not result in uses that provide for foraging habitat. Consistent with the methodology established through implementation of the Swainson's hawk Ordinance, properties that are zoned for industrial uses are considered to not contain foraging habitat for Swainson's hawk. Additionally, the existing project area has been traditionally disturbed by past mining uses. Through analysis of the Easton project

directly north of the project site, it was determined that mine tailings do not constitute foraging habitat. As such, the project will not result in impacts to foraging habitat and impacts are ***less than significant.***

BURROWING OWL

According to the CDFW life history account for the species, burrowing owl (*Athene cunicularia*) habitat can be found in annual and perennial grasslands, deserts, and arid scrublands characterized by low-growing vegetation. Burrows are the essential component of burrowing owl habitat. Both natural and artificial burrows provide protection, shelter, and nesting sites for burrowing owls. Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but also use human-made structures such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement. Burrowing owls are listed as a California Candidate Species under the California Endangered Species Act due to direct mortality and permanent habitat loss due to urbanization and reduces in their primary burrow excavators – ground squirrels. The CDFW will review the species for one year before the California Fish and Game Commission make a final decision on listing. As a candidate species, burrowing owls are afforded the same protections as state-listed endangered or threatened species.

Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. Breeding season is generally defined as spanning February 1 to August 31 and wintering from September 1 to January 31. Occupancy of suitable burrowing owl habitat can be verified at a site by detecting a burrowing owl, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance. Burrowing owls exhibit high site fidelity, reusing burrows year after year.

According to the CDFW “Staff Report on Burrowing Owl Mitigation” (March 2012), surveys for burrowing owl should be conducted whenever suitable habitat is present within 500 feet of a proposed impact area; this is also consistent with the “Burrowing Owl Survey Protocol and Mitigation Guidelines” published by The California Burrowing Owl Consortium (April 1993). Occupancy of burrowing owl habitat is confirmed whenever one burrowing owl or burrowing owl sign has been observed at a burrow within the last three years.

The CDFW Staff Report on Burrowing Owl Mitigation indicates that the impact assessment should address the factors which could impact owls, the type and duration of disturbance, the timing and duration of the impact, and the significance of the impacts. The assessment should also take into account existing conditions, such as the visibility and likely sensitivity of the owls in question with respect to the disturbance area and any other environmental factors which may influence the degree to which an owl may be impacted (e.g. the availability of suitable habitat).

PROJECT IMPACTS

There are 10 documented occurrences of burrowing owl within five miles of the project site (CDFW, 2021). There is suitable nesting and foraging habitat for burrowing owl within the project site; therefore, the species has potential to occur onsite. Construction-

related ground disturbance could destroy potentially active and/or occupied burrows during site clearing and grading (such as through crushing and entombing immobile eggs or juveniles if present during the breeding season), injure or kill individuals from equipment strikes, or harass individuals near occupied burrows to the extent that it causes reduced survival or nest success from construction noise or activity that agitates nesting birds. Injury to or mortality of burrowing owls, their nests, or young, or the direct removal of occupied burrow(s) would be considered a ***potentially significant*** impact.

To reduce impacts to burrowing owl to less than significant, the Mitigation Measure BR-1h shall be implemented as part of the proposed project. Mitigation consists of pre-construction surveys to ensure that mining activities do not injure kill individuals, and do not agitate nesting birds that may result in nest failure. Impacts are ***less than significant with mitigation.***

TRICOLORED BLACKBIRD

The tricolored blackbird (*Agelaius tricolor*) is protected under the California Fish and Game Code (Sections 3503 and 3800). In March of 2019, tricolored blackbird was listed as a State threatened species under the California Endangered Species Act.

Reasons for decline of tricolored blackbird populations include loss of nesting and foraging habitat. According to the CDFW Life History Account for the tricolored blackbird (*Agelaius tricolor*), the species is mostly a resident in California, and common locally throughout the Central Valley. The species is a colonial nester which breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs. Nesting colonies usually support a minimum of 50 pairs. The species feeds in grassland and cropland habitats. The usual breeding season is mid-April into late July.

PROJECT IMPACTS

There are 16 documented occurrences of tricolored blackbird within five miles of the project (CDFW 2021). There is suitable foraging habitat and marginally suitable nesting habitat for tricolored blackbird within the project site within willow thickets; therefore, the species has potential to occur onsite. Utilization of heavy equipment for mining activities could impact tricolored blackbird nests, but only if active nests for this species become established in suitable nesting habitat in the project area or in close proximity (i.e., within 500 feet of the grading footprint) prior to or at any time during construction. Increased levels of noise and human activity within 500 feet of an active nest colony could result in nest abandonment or forced fledging and subsequent loss of fertile eggs, nestlings, or juveniles. Potential injury to or mortality of tricolored blackbirds (including loss of an active nest or reduced nesting success of a nearby colony) would be considered a ***potentially significant*** impact.

In order to reduce potential impacts to nesting tricolored blackbirds, mitigation measures have been included. Pre-construction surveys shall be conducted where suitable nesting habitat is present within 500 feet of mining activities during the breeding season (February 1 through July 31). If tricolored blackbirds are found nesting within 500 feet of the survey area, the CDFW shall be contacted and appropriate avoidance and impact

minimization measures shall be implemented. This may include establishing a buffer or postponing construction until fledging of all nestlings (about July 31), as recommended by a qualified biologist. If no tricolored blackbirds are found during the pre-construction survey, no further mitigation would be required. Impacts to tricolored blackbird are ***less than significant with mitigation.***

SPECIAL STATUS BIRDS AND MIGRATORY BIRD TREATY ACT PROTECTED BIRDS

Suitable nesting and/or wintering and foraging habitat for 16 special-status birds is present within the project area. These include white-tailed kite, golden eagle, northern harrier, Swainson's hawk, ferruginous hawk, burrowing owl, Lewis' woodpecker, Nuttall's woodpecker, prairie falcon, loggerhead shrike, yellow-billed magpie, oak titmouse, grasshopper sparrow, song sparrow, yellow-breasted chat, and tricolored blackbird. Also, suitable nesting and/or wintering and foraging habitat for five non-special-status bird species protected under the MBTA. These include great blue heron, great egret, osprey, Cooper's hawk and merlin. Impacts to Swainson's hawk, burrowing owl and tricolored blackbird are addressed separately in this chapter. The remaining species are covered by the impact assessment below.

Project development would remove vegetation and numerous trees, which have the potential to impact nesting birds protected by the federal Migratory Bird Treaty Act and California Fish and Game Code (CFGC). Direct construction-related impacts on nesting birds include destruction of nests or eggs from vegetation trimming, tree removal, and grading. Indirect impacts on nesting birds, including special-status species, include visual or auditory disturbance from construction noise and human presence. These types of disturbance could result in nest abandonment or failure by deterring birds from preferred nest and foraging sites, and/or distracting adults from tending to their eggs or young. Direct and indirect impacts on nesting birds, including special-status species, on and near the project site during construction could result in nest destruction, abandonment, and failure. The potential loss of an active nest site for any migratory bird covered under the Migratory Bird Treaty Act would be a violation of the provisions of the Migratory Bird Treaty Act and would be considered a ***potentially significant*** impact. Separate mitigation for nesting raptors (Mitigation Measure BR-1j) and nesting migratory birds (Mitigation Measure BR-1k) have been included below that requires surveys be conducted during the nesting season to ensure that project activities do not result in direct harm to nesting birds or nest abandonment. Impacts to special status and migratory birds are ***less than significant with mitigation.***

MAMMALS

BATS

There are many bat species which can be found in Sacramento County, the following of which are listed as special animals: pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), and Yuma myotis bat (*Myotis yumanensis*). The pallid bat and western red bat have potential to occur on the project site and are state-listed Species of Special Concern. The bat species roost within either natural or human-made structures, such as caves, mines, crevices (including under bridges), hollow trees, and

in abandoned or seldom-used buildings. Young are born to the species in the spring and early summer (maternity colonies typically begin to form in April, and births occur from May through early July, depending on the species). Threats to the species include loss of foraging and roosting habitat, and disruption of maternity colonies.

PROJECT IMPACTS

If bat maternity roosts or winter hibernacula are located in or adjacent to the grading area, impacts could result from the permanent removal of roosting sites, such as the removal of trees and snags, or from construction-related noise or vibrations in proximity to an occupied roosting site that results in roost abandonment and potential bat mortality. Bats are protected by the State under CFGC Section 4150 for non-game mammals. The removal of a maternity roost or winter hibernaculum or the harm or mortality of bats as a result of project implementation would be considered a violation of the take provisions of Section 4150 of the CFGC and would be considered a ***potentially significant*** impact.

Mitigation is recommended to reduce impacts to bats. Mitigation includes phase specific surveys to determine presence of roosting bats, and implementing a bat avoidance plan, buffers and exclusions to reduce impacts to bats. Impacts to bats is ***less than significant with mitigation.***

AMERICAN BADGER

According to the CDFW life history account for the species, the American badger (Taxidea taxus) is an uncommon, permanent resident which is most often found in drier open stages of shrub, forest, and herbaceous habitats. Badgers dig burrows in soils which are easily crumbled and broken down, and regularly dig new burrows to use for cover during the night. Badgers may exhibit some torpor in winter, but do not hibernate. Home ranges vary by geography and season, but are generally quite large (up to 1,500 acres for males). Badgers mate in the early summer and fall, and young are born in March and April; females bear and rear young within burrows. Badgers prey on small mammals, reptiles, and insects. The conversion of suitable habitat to either urban or agricultural uses has contributed to the decline of the species, as has the usage of rodenticides and other “pest” control mechanisms – which has resulted in direct mortality due to ingestion and also a substantial reduction in the prey base. The American badger is state-listed as a Species of Special Concern.

PROJECT IMPACTS

There are two documented occurrences of American badger within five miles of the project site (CDFW 2021). American badger has potential to occur within the project site. Project implementation could impact this species if the species is denning in or near the mining footprint during ground disturbance. If the species is present, impacts could destruction of potentially active and/or occupied burrows, injury/mortality of individual badger, and/or harassment from adjacent heavy equipment that agitates denning badger.

Potential injury to or mortality of American badger (including loss of an occupied den) would be considered a ***potentially significant*** impact. To reduce impacts to American badger to less than significant, mitigation is recommended that includes pre-construction surveys to determine if there is presence, and establishing avoidance buffers and relocation, if necessary. Impacts are ***less than significant with mitigation.***

IMPACT BR-2: WOULD THE PROJECT HAVE A SUBSTANTIAL ADVERSE EFFECT ON ANY RIPARIAN HABITAT OR OTHER SENSITIVE NATURAL COMMUNITY IDENTIFIED IN LOCAL OR REGIONAL PLANS, POLICIES OR REGULATIONS OF BY THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE OR U.S. FISH AND WILDLIFE SERVICE

The following sensitive natural communities, as defined in "Sensitive Natural Communities" under the "Environmental Setting" section above, are present on the project site as outlined by subheading below. The project site does not contain riparian habitat, and no designated critical habitat or essential fish habitat is located on the project site.

POTENTIALLY JURISDICTIONAL WETLANDS (AND OTHER WATERS)

A total of 30.505 acres of aquatic features have been mapped within the project site (ECORP, 2021c) and may be subject to State or Federal regulation. As described under Impact BR-3 below, the project has been designed to avoid impacts to waters to the extent feasible. In the event that waters are not able to be fully avoided, implementation of Mitigation Measure BR-3 would avoid, minimize and compensate for potential impacts on potentially jurisdictional waters of the U.S. and State. Impacts to sensitive aquatic communities are ***less than significant with mitigation.***

GRASSLAND HABITAT

Approximately 85.0 acres of annual grasslands occur in the southwestern, northwestern, and northeastern portions of the project site. As described under Impact BR-1 for Swainson's hawk (reference foraging impact habitats), project development would not result in the permanent loss of annual grassland. Project implementation largely consists of the removal of existing dredge tailings and would not directly impact the areas of annual grasslands on the project site. Minimal impacts to grassland habitat may occur in areas where conveyors are placed to transport aggregate material. These areas would be returned to a natural grassland state as outlined in the reclamation plan upon completion of mining activities. Indirect impacts that degrade adjacent grassland could result from stormwater runoff, fugitive dust or pollution; however, these impacts are anticipated to be largely prevented and minimized through implementation of construction best management practices, the project stormwater pollution and prevention plan, and other permits required by existing regulations (see Chapter 10, Impact HYD-1). Impacts to grassland habitat are ***less than significant.***

Oak Woodlands

The project site contains approximately 139.4 acres of oak woodlands, which are characterized by combination of blue oak woodland, interior live oak woodland, and mixed oak forest. Approximately 16.8 acres of blue oak woodland occurs at two locations in the northwestern and south-central portions of the project site. Approximately 95.6 acres of interior live oak woodland occurs throughout the project site, both between and on dredge tailings. Approximately 27.0 acres of mixed oak forest occurs at several locations in the central portion of the project site. This vegetation community is characterized by a tree canopy that is co-dominated by interior live oak, blue oak, valley oak, and Fremont cottonwood.

The proposed grading plan for mining activities would avoid the areas of blue oak woodland mapped on the project site that occur on the fringes of the Aerojet campus. Unlike large portions of the undisturbed eastern portion of the County that supports extensive oak woodlands, areas within the Aerojet campus contain woodlands that are fragmented nature due to existing disturbance and presence of mine tailings. Areas of interior live oak woodland and mixed oak forest are interspersed throughout the project site and between dredge tailings. Implementation of the project would prioritize mining of aggregate material in the dredge tailings and would result in impacts to individual trees and areas of woodland that are within and between mine tailings (refer to the discussion on Native Trees under Impact BR-5 below).

Any impact on a sensitive natural community from project development would be ***potentially significant.*** While the project does not propose to remove large stands of native oak woodlands, removal of a number of oak trees would be required. As such, the project would also result in the loss of oak woodland canopy. The project would mitigate for removal of native oak trees, consistent with County General Plan policy (refer to Impact BR-5 for additional discussion) through implementation of mitigation measures addressing native tree impacts in section BR-5 below. The measures represent feasible mitigation for the project. Despite implementation of the measures below, the project would result in a substantial, permanent loss of native trees and oak woodland onsite. For these reasons, impacts associated with native trees are ***significant and unavoidable***.

Impact BR-3: Would the Project have a Substantial Adverse Effect on State or Federally Protected Wetlands (Including, but Not Limited to, Marsh, Vernal Pool, Coastal, Etc.) Through Direct Removal, Filling, Hydrological Interruption, or Other Means

Based on the aquatic resources delineation conducted by ECORP in 2021 (see Appendix BR-3, Aquatic Resources Delineation Report), approximately 30.505 acres of aquatic resources are present on the project site (Table BR-2). Because jurisdiction has not been verified by the appropriate regulatory agencies, all aquatic features within the

project site are considered to be potentially jurisdictional wetlands and other waters of the U.S. and waters (including wetlands) of the State.

Direct permanent impacts could occur from the permanent modification (i.e., dredge and/or fill) of wetlands/other waters as a result of the placement of fill during aggregate extraction activities. Indirect impacts could occur in offsite wetlands/other waters from increases in sedimentation and runoff from adjacent construction activities, or in some cases from construction activities that are within the same aquatic feature such as work occurring in upstream areas. Implementation of construction best management practices (see Mitigation Measure BR-1a; in particular Erosion Control, Equipment Storage and Fueling, Dust Control), the project stormwater pollution and prevention plan, and other permits required by existing regulations (see Chapter 10, Impact HYD-1), would largely prevent indirect impacts from sedimentation, runoff, and pollutant related impacts to off-site wetlands and other waters. Any impact on State and/or federally protected wetlands would be considered a ***potentially significant*** impact.

The project was designed to maintain existing drainage patterns and on-site hydrology and to avoid and minimize grading impacts on aquatic resources (see also Chapter 10, Hydrology and Water Quality). The grading plan has been designed such that no fill of wetlands or waters would occur as a result of aggregate extraction. Minor impacts to waters would be required in order to improve two culvert crossings in the Phase 1 area of the project (Plate BR-14, Plate BR-15). Impacts would include less than 0.01 acres of permanent impacts and less than 0.01 of temporary impacts. Additional impacts to waters may be required for culvert crossings in future phases of the project as final design plans are developed.

To reduce impacts to State and federally protected wetlands and other waters to less than significant, the following Mitigation Measure BR-3 shall be implemented as part of the project. Mitigation Measure BR-3 would reduce potential project-related impacts on State or federally protected wetlands because project design refinements, securing required project permits, and implementation of an Aquatic Resources Mitigation Plan including required mitigation and compensation would minimize loss of, restore, and maintain on-site jurisdictional aquatic habitats; and would compensate for residual losses of these features to achieve no net loss per specified performance standards of success and consistent with relevant required USACE, RWQCB and CDFW project permits. Impacts are ***less than significant with mitigation.***

Plate BR-14: Impacts to Waters – Culvert Replacement 1

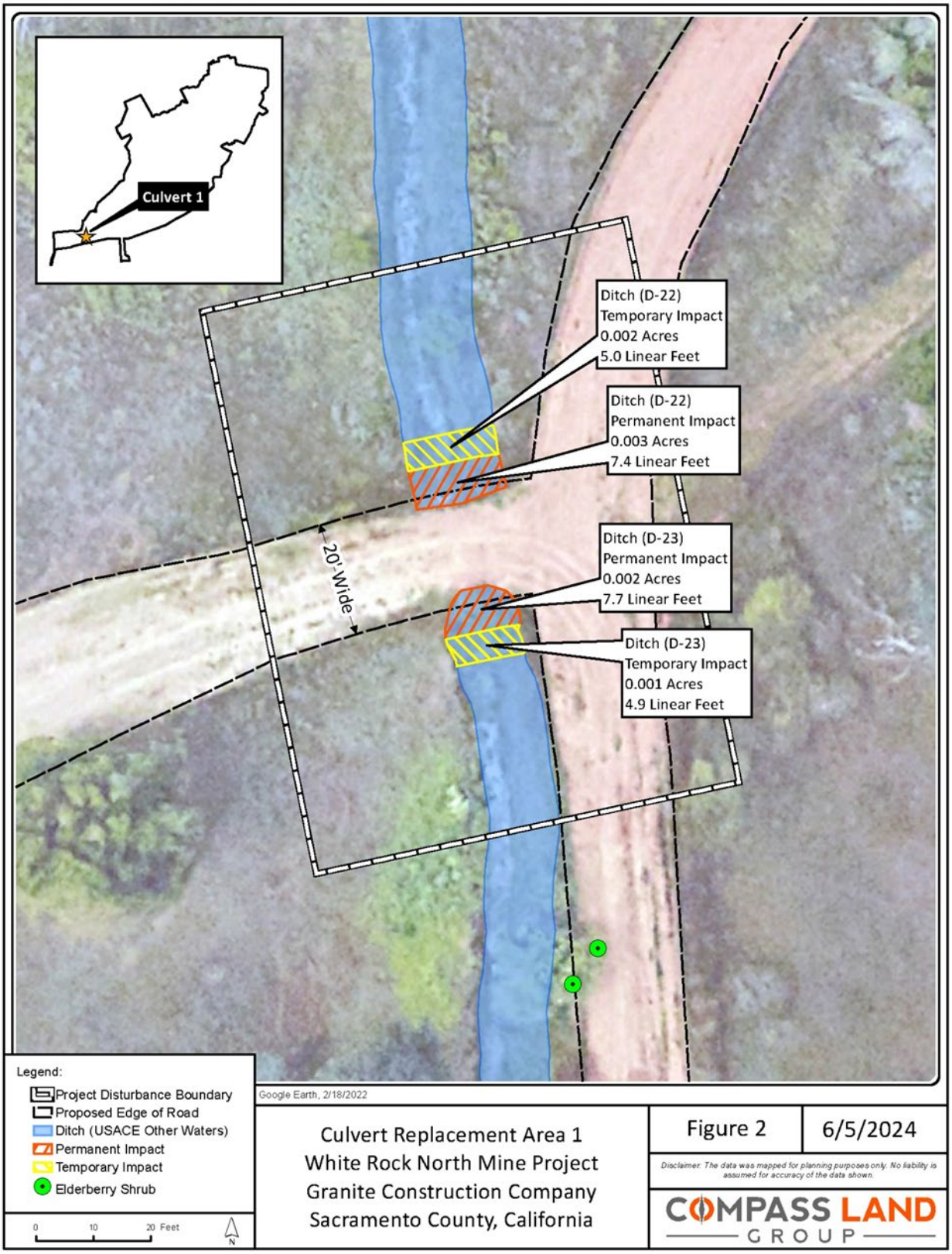
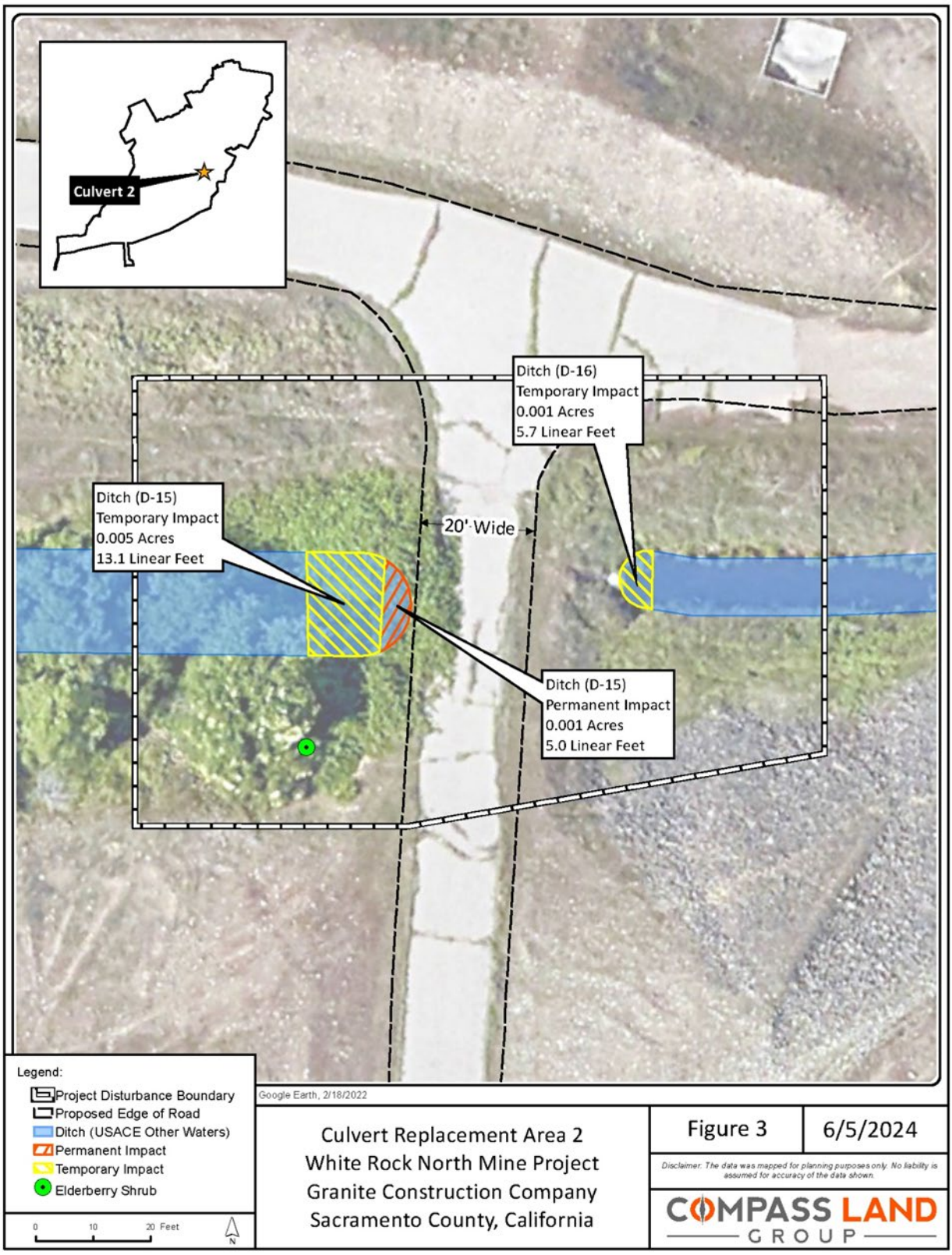


Plate BR-15: Impacts to Waters – Culvert Replacement 2



Impact BR-4: Would the Project Interfere Substantially with the Movement of Any Native Resident or Migratory Fish or Wildlife Species or With Established Native Resident or Migratory Wildlife Corridors, or Impede the Use of Native Wildlife Nursery Sites

The project site has been historically disturbed through dredge mining activities, and operations related to past Aerojet uses. According to the California Essential Habitat Connectivity mapped by CDFW, the project site does not contain essential connectivity areas (CDFW, 2021). To the north and west the project is primarily bordered by existing or planned commercial and residential development, and to the south and east the project site is adjacent to undeveloped land utilized for grazing and agriculture. The site does not contain native wildlife nursery sites.

Trees and vegetation on the project may provide nesting habitat to migratory bird species. Impacts to migratory birds due to removal of trees and vegetation or nest disturbance from utilization of heavy equipment would result in a ***potentially significant impact*** to migratory bird species. Impacts to migratory birds have been discussed under the special status species section above under Impact BR-1. Implementation of Mitigation Measures BR-1j and BR-1k require pre-construction surveys prior to initiating work in areas in the vicinity of potential nesting habitat, during the nesting season. Impacts to movement of native residents or migratory wildlife species are ***less than significant with mitigation.***

Impact BR-5: Would the Project Conflict with Any Local Policies or Ordinances Protecting Biological Resources, Such as A Tree Preservation Policy or Ordinance

Native Trees

Permanent Impacts

The project site contains a total of 3,096 oak trees six inches or greater in dbh as mapped by ECORP in 2021, including 1,794 interior live oaks, 1,137 blue oaks, 152 valley oaks, 9 oracle oaks, and 4 California black oaks (refer to Plate BR-5 through Plate BR-11). The full inventory of onsite native trees is contained in Appendix BR-2. Project implementation would require the removal of native trees due to grading and extraction activities. Removal of protected, native trees would result in a ***potentially significant*** impact.

Plate BR-16 illustrates all trees on the project by health and those that are within and outside of the grading limits. Removal of native trees requires mitigation (included as Mitigation Measure BR-5a below) for all trees except those that are dead or in severe decline. Plate BR-17 through Plate BR-23 further illustrate just the trees that would require removal and mitigation. A summary of tree health and required removal is outlined by phase in Table BR-8. An estimated 344 native trees would require removal and mitigation over the life of the project.

TEMPORARY IMPACTS

Native trees that are not proposed for removal may be subject to partial or temporary impacts due to encroachment and mining activities from use of heavy equipment. Mitigation Measure BR-5b is included that would require implementation of protective measures when mining activities occur in the vicinity of protected native oaks to ensure the ongoing health of trees to remain.

NATIVE TREE IMPACTS CONCLUSION

Mitigation has been included that would require in-kind mitigation for all native trees removed pursuant to General Plan policies CO-139 and CO-140 (refer to the regulatory section above). These measures require in-kind mitigation on a dbh inch for inch basis for all trees removed, as well as implementation of protective measures for trees to remain. The measures represent feasible mitigation for the project. Despite implementation of the measures below, the project would result in a substantial, permanent loss of native trees onsite. For these reasons, impacts associated with native trees are ***significant and unavoidable***.

Plate BR-16: Native Tree Health and Impacts Map

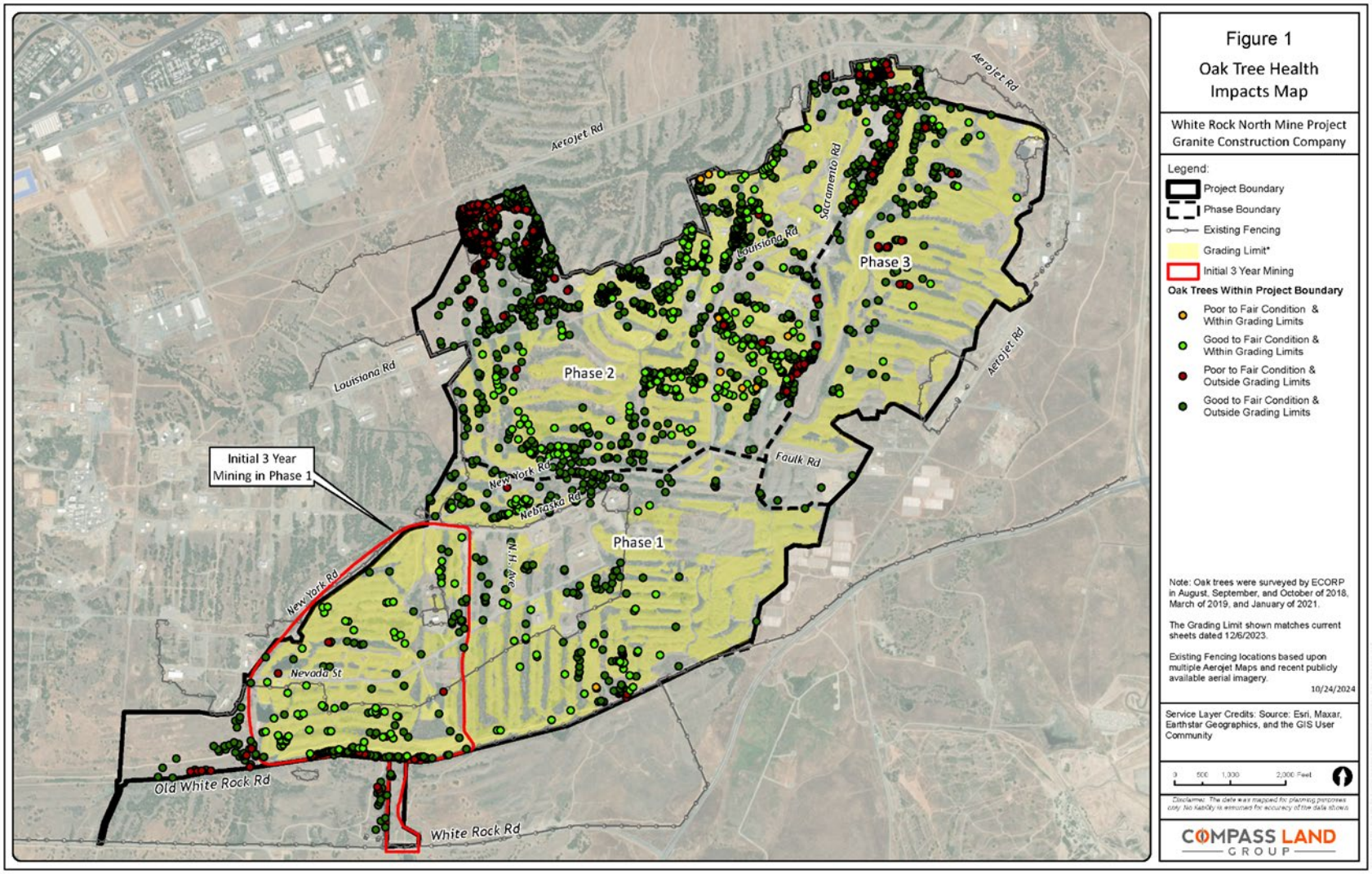


Plate BR-17: Native Tree Removal Grid Map

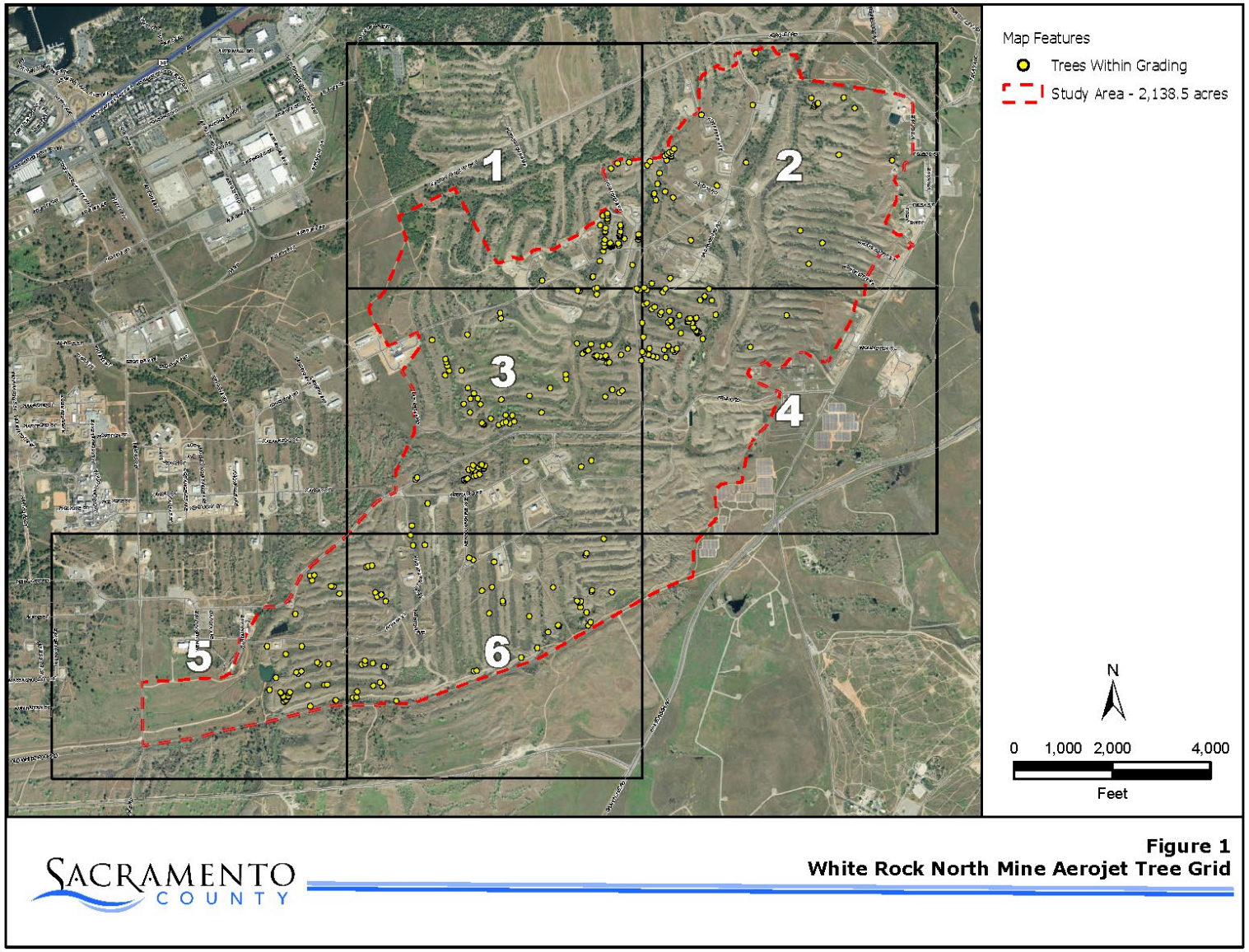


Plate BR-18: Native Tree Removal Impacts (1 of 6)

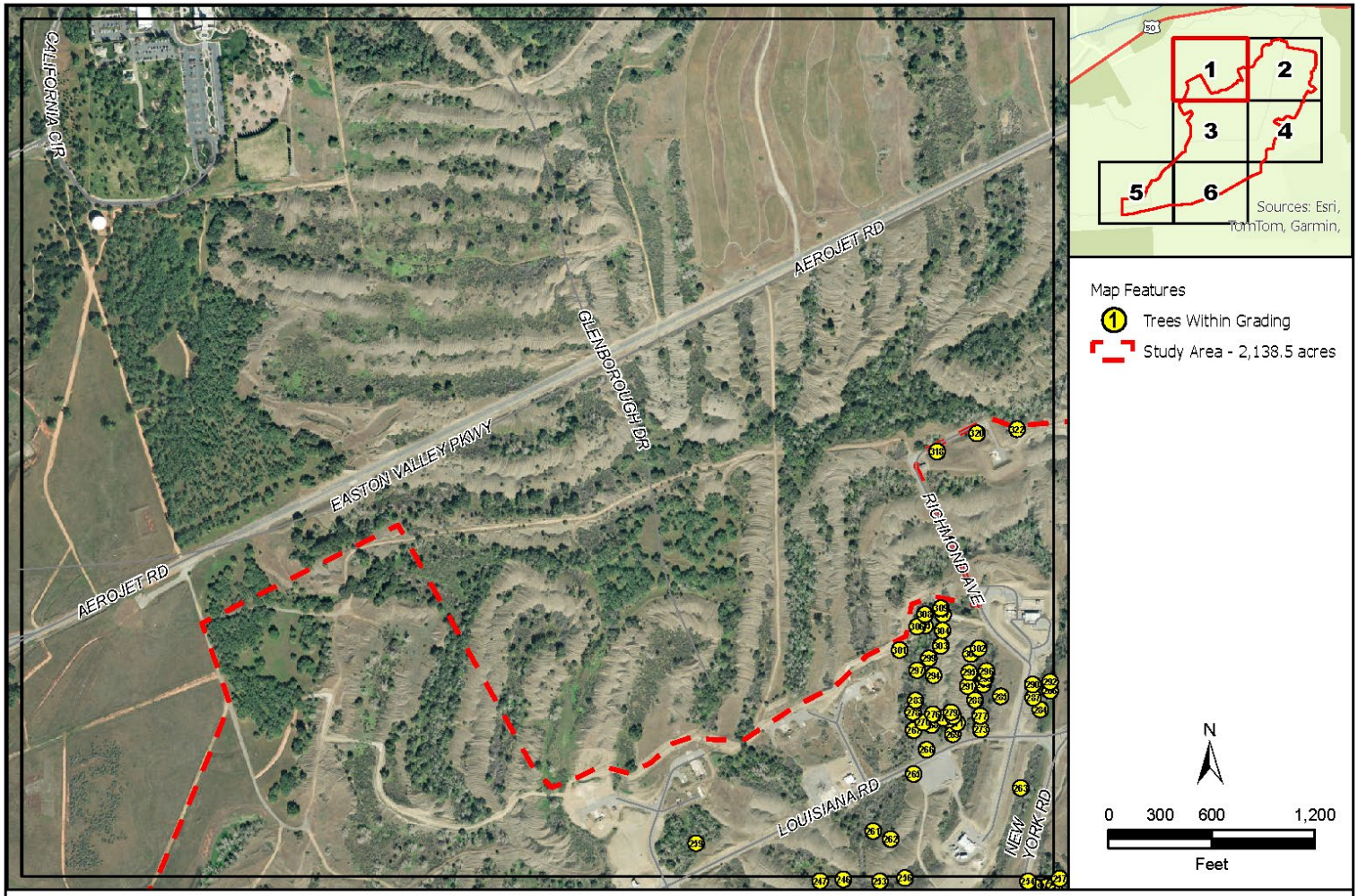


Figure 2
White Rock North Mine Aerojet Tree Locations (Sheet 1 of 6)

Plate BR-19: Native Tree Removal Impacts (2 of 6)

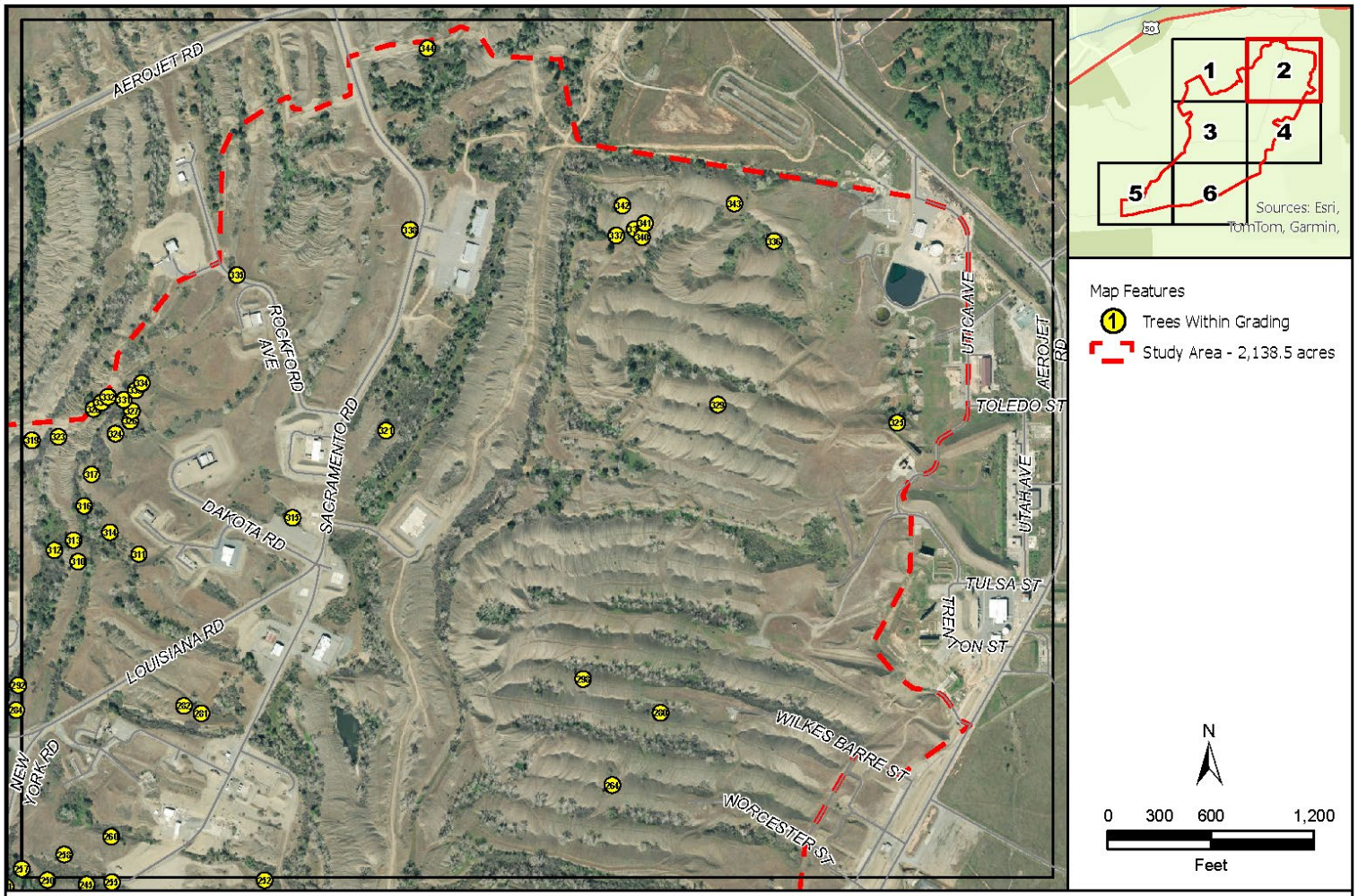
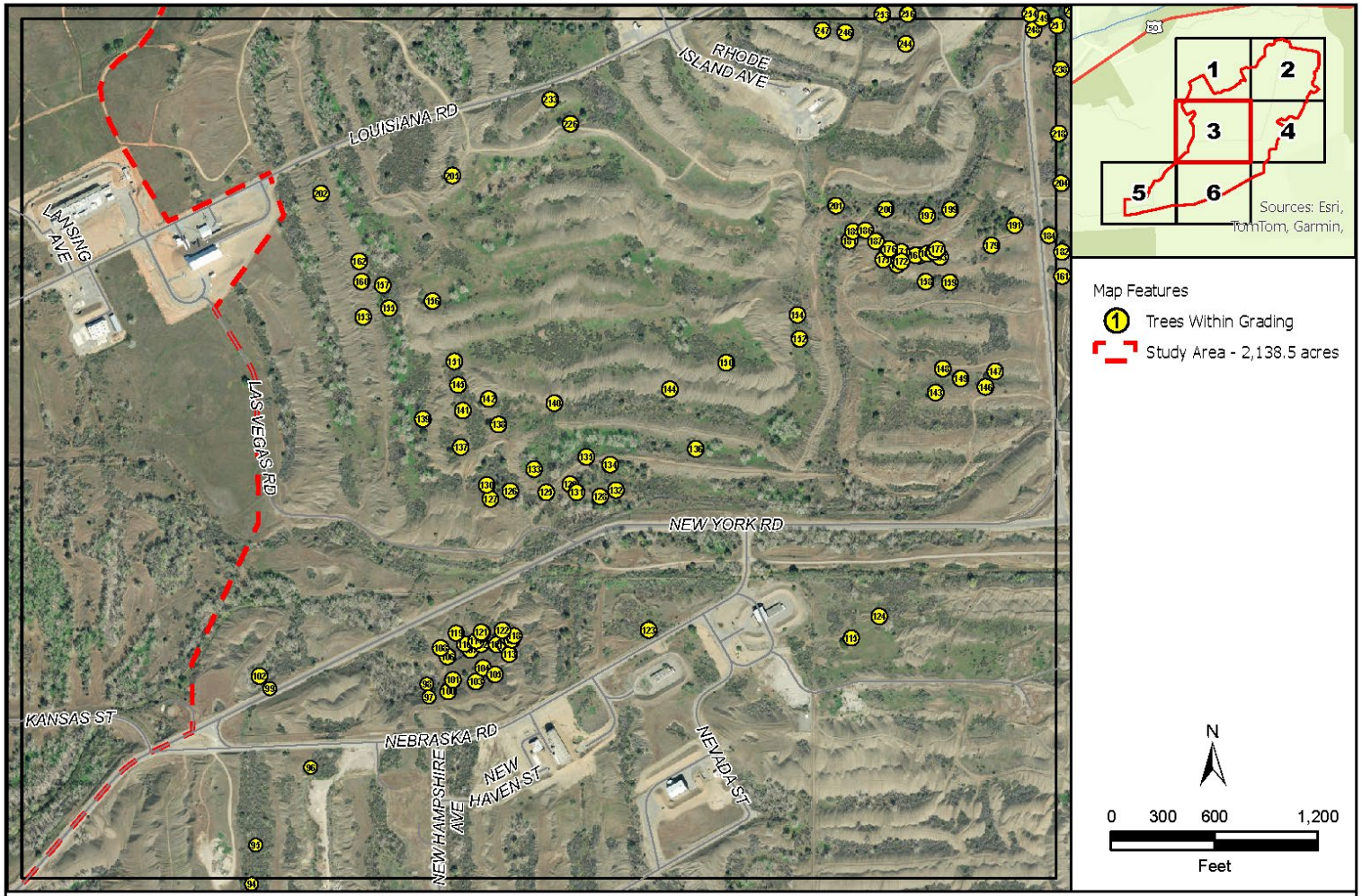


Figure 3
White Rock North Mine Aerojet Tree Locations (Sheet 2 of 6)

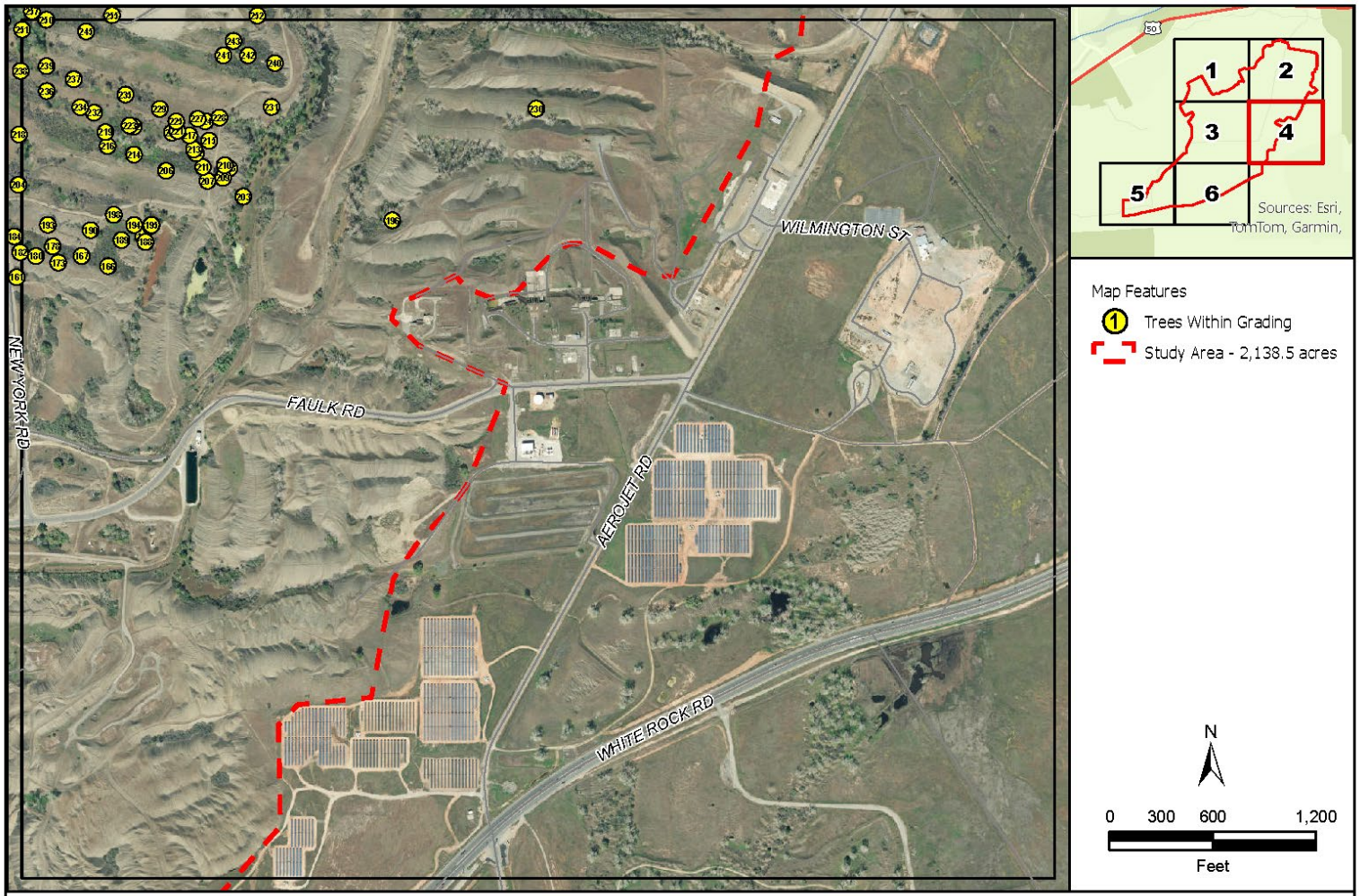
Plate BR-20: Native Tree Removal Impacts (3 of 6)



SACRAMENTO COUNTY

Figure 4
White Rock North Mine Aerojet Tree Locations (Sheet 3 of 6)

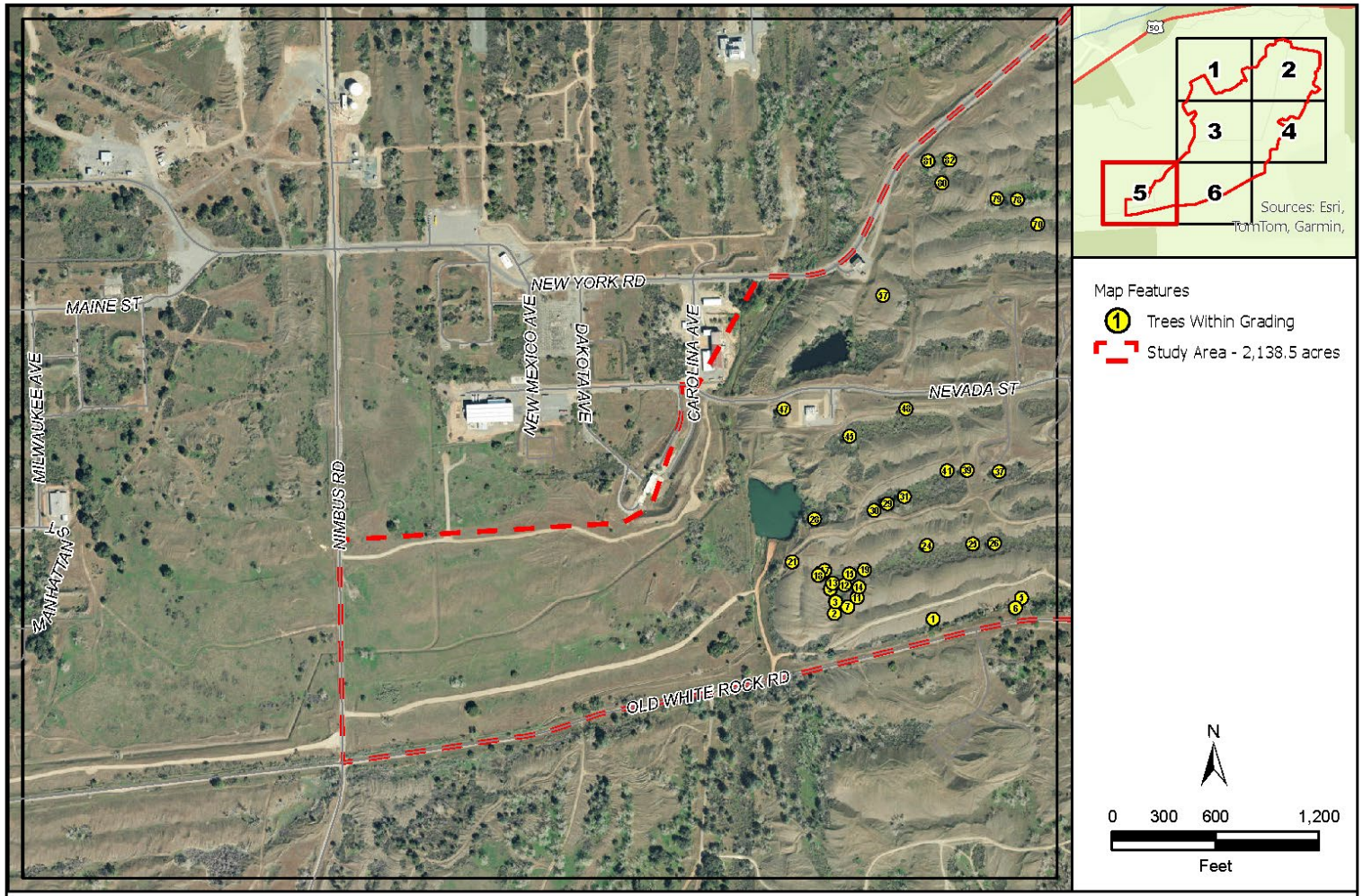
Plate BR-21: Native Tree Removal Impacts (4 of 6)



SACRAMENTO COUNTY

Figure 5
White Rock North Mine Aerojet Tree Locations (Sheet 4 of 6)

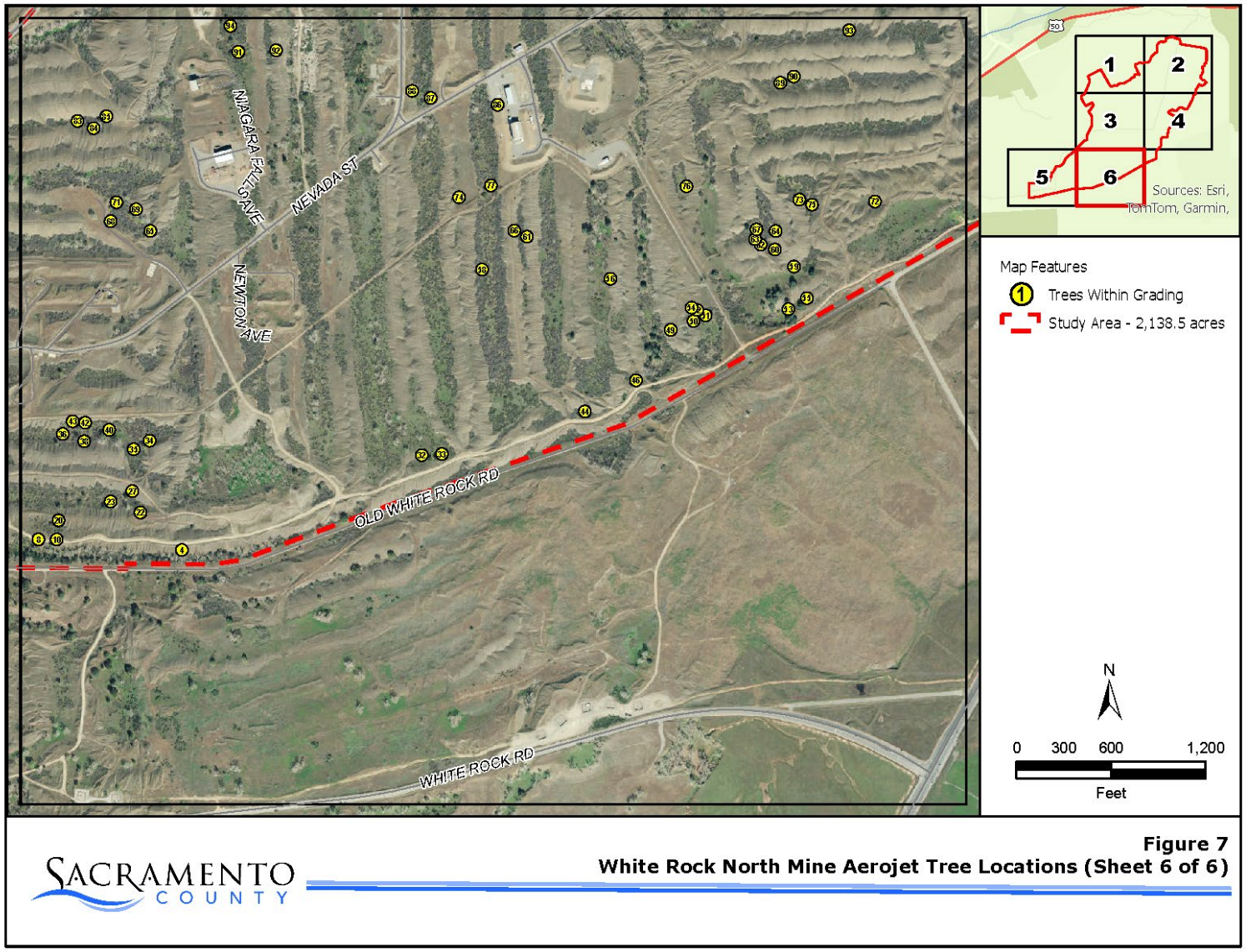
Plate BR-22: Native Tree Removal Impacts (5 of 6)



SACRAMENTO COUNTY

Figure 6
White Rock North Mine Aerojet Tree Locations (Sheet 5 of 6)

Plate BR-23: Native Tree Removal Impacts (6 of 6)



SACRAMENTO COUNTY

Figure 7
White Rock North Mine Aerojet Tree Locations (Sheet 6 of 6)

Table BR-8: Oak Tree Health and Removal

	Phase 1 Tree Impacts (first 3 years)	Phase 1 Tree Impacts (remaining years)	Phase 2 Tree Impacts	Phase 3 Tree Impacts	All Phases
Inside Limits of Grading	**63**	**61**	**206**	**14**	**344**
Good to Fair Condition	63	60	199	14	336
Fair to Poor Condition	0	1	7	0	8
Outside Limits of Grading	**173**	**242**	**2,140**	**197**	**2,752**
Good to Fair Condition	164	228	1,945	186	2,523
Fair to Poor Condition	9	14	195	11	229
Total:	**236**	**303**	**2,346**	**211**	**3,096**

Impact BR-6: Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Local, Regional, or State Habitat Conservation Plan

South Sacramento Habitat Conservation Plan

The project site is largely outside of (but adjacent to) the boundary of the SSHCP. The project site is located north of White Rock Road, which is the northern boundary of the SSHCP area; south of White Rock Road is located within the SSHCP, and those areas south of White Rock Road that are located within the County's Urban Services Boundary (USB) are also located within the SSHCP Urban Development Area (UDA). Extension of the conveyor system would be located within the UDA. Impacts associated with the installation and operation of the conveyor system would be temporary in nature and would not result in permanent conversion of SSHCP habitat landcovers or require payment of habitat conversion mitigation fees. Potential impacts of the project on resources protected by the State and Federal ESA and CWA would be located on areas of the project that are located outside of the SSHCP boundary; therefore, the project will acquire necessary permits from the appropriate agencies and would not be covered by the provisions of the SSHCP.

The project would avoid, minimize and mitigate impacts on natural resources to comply with the regulatory standards of USFWS, USACE, CDFW, and RWQCB in order to obtain applicable permits and other approvals from these environmental resource agencies. These are the same regulatory standards applied to the review and approval of the SSHCP. Therefore, the project mitigation strategy is designed to achieve the same general mitigation standards applicable to Covered Activities under the SSHCP. The project would implement BMPs during construction (see Mitigation Measure BR-1a) that are consistent with those described in the SSHCP and would implement species-specific mitigation measures (see Mitigation Measures BR-1b through BR-1m) that are also consistent with avoidance and minimization measures for Covered Species described in the SSHCP.

Additionally, the project would not interfere with any existing preserves or with the potential acquisition of preserves. The conveyor alignment encompasses a small area that would not preclude the acquisition of preserves to accomplish the conservation strategies outlined in the SSHCP. Impacts related to potential conflicts with the SSHCP are ***less than significant.***

Mitigation Measures

BR-1a: Implement Construction Best Management Practices to Avoid and Minimize Potential for Ground-Disturbing Activity Related Impacts on Special-Status Plants and Wildlife

Project Proponent shall implement the following Best Management Practices.

1. **Construction Fencing**. Orange construction fencing or equivalent, shall be installed to ensure that ground disturbance does not extend beyond the allowed disturbance footprint (i.e., the limit of project disturbance plus equipment staging areas, vehicle parking, materials storage, and access roads). The fencing shall remain in place until project completion for that phase.

2. **Erosion Control**. Before implementing ground-disturbing activities, temporary control measures for sediment, stormwater, and pollutant runoff shall be installed to protect water quality and species habitat. Silt fencing or other appropriate sediment control device(s) shall be installed downslope of any activities that disturbs soils. Fiber rolls and seed mixtures used for erosion control shall be free of viable noxious weed seed. Erosion controls installed in or adjacent to known or potential habitat for western pond turtle and western spadefoot must be of appropriate design and materials that shall not entrap the species (e.g., not contain mesh netting). Regular monitoring and maintenance of the project's erosion control measures shall be conducted until project completion to ensure effective operation of erosion control measures.

3. **Equipment Storage and Fueling**. During ground-disturbing activities, equipment storage and staging shall occur only in designated areas of the development footprint. Fuel storage and equipment fueling shall occur a minimum of 100 feet away from waterways, stream channels, stream banks, and other environmentally sensitive areas within the development footprint. If ground-disturbing activities result in a spill of fuel, hydraulic fluid, lubricants, or other petroleum products, the spill shall be absorbed, and waste disposed of in a manner to prevent pollutants from entering a waterway or stream setback.

4. **Erodible Materials**. Ground-disturbing activities must not deposit erodible materials into waterways; vegetation clippings, brush, loose soils, or other debris material shall not be stockpiled within stream channels or on adjacent banks. Erodible material must be disposed of such that it cannot enter a waterway, stream setback or aquatic land cover type. If water and sludge must be pumped from a subdrain or other structure, the material shall be conveyed to a temporary settling basin to prevent sediment from entering a waterway.

5. **Dust Control**. During ground-disturbing activities, active construction sites shall be watered regularly, if warranted, to avoid or minimize impacts from dust on adjacent vegetation and wildlife habitats. No surface water shall be used from aquatic land covers and water shall be obtained from a municipal source or approved existing groundwater well.

6. **Construction Lighting**. All temporary lighting (e.g., lighting used for security or occasional nighttime equipment maintenance or other limited scope of

work such as to avoid extreme heat) shall be directed away from adjacent natural habitats, and particularly riparian and wetland habitats and wildlife movement areas.

7. **Biological Monitor**. A qualified biological monitor shall be on-site during ground-disturbing activities as needed, as described below in Mitigation Measure BR-1b through BR-1n.

8. **Training of Mining and Construction Staff**. A mandatory Worker Environmental Awareness Program (WEAP) shall be conducted by a qualified biologist for all mining workers, including contractors, prior to the commencement of ground-disturbing activities. The training shall include how to identify special-status species that might enter the mining site, relevant life history information and habitats, statutory requirements and the consequences of non-compliance, the boundaries of the mining area and permitted disturbance zones, and appropriate protocols if a special-status species is encountered.

    a. Supporting materials containing training information shall be prepared and distributed by the qualified biologist. When necessary, training and supporting materials shall also be provided in Spanish. Upon completion of training, mining personnel (and contractors if applicable) shall sign a form stating that they attended the training and understand all avoidance and minimization measures.

9. **Speed Limit**. Project-related vehicles shall observe the posted speed limits on paved roads and a 10-mile-per-hour speed limit on unpaved roads and during travel in project areas. Mining workers and contractors (if applicable) shall be given weekly tailgate instruction to travel only on designated and marked existing, cross-country, and project-only roads.

10. **Litter Removal Program**. A litter control program shall be instituted for the entire project site. All workers shall ensure that their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. All garbage shall be removed from the project site at the end of each workday, and all personnel shall not feed or otherwise attract wildlife to the area where construction and mining activities are taking place.

11. **No Pets in Construction Areas**. To avoid harm and harassment of native species, workers and visitors shall not bring pets onto a project site (not including service animals).

12. **Prevent Invasive Species Spread**. Project implementation activities shall be conducted in a manner that avoids the spread of invasive species. Such prevention measures shall include the following:

a. Before bringing any equipment onto the project site, equipment must be cleaned of mud, dirt, and plant material.

b. Ground-disturbing activities shall start in un-infested areas and move to infested areas to the maximum extent feasible. Where work must occur in infested areas, equipment must be cleaned of any mud, dirt, and plant material before moving into un-infested areas; or the project proponent shall apply an appropriate manual, mechanical, or chemical (if authorized) treatment in accordance with County and State regulations prior to working in infested areas.

c. Invasive plant prevention techniques shall be incorporated into operations plans.

BR-1B: Avoid and Minimize Impacts on Rare Plant Species

Adequate measures shall be taken to avoid inadvertent take of Sanford's arrowhead and other special-status plants by implementing the following steps.

1. Prior to the start of ground-disturbing activities, including clearing and grubbing, and/or grading, a qualified biologist shall conduct a properly timed special-status plant survey for Sanford's arrowhead and other special status plants within the species' suitable habitat within the project work limits. The survey will follow the CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Plan Populations and Sensitive Natural Communities* (CDFW, 2018), or the most recent guidelines.

2. If the survey concludes that Sanford's arrowhead or other special-status plant species are present within the project work limits, the biologist shall establish an adequate buffer area for each plant population to exclude activities that directly remove or alter the habitat of, or result in indirect adverse impacts on, the special-status plant species. A qualified biologist shall oversee installation of a temporary, plastic mesh-type construction fence (Tensor Polygrid or equivalent) at least 4 feet (1.2 meters) tall around any established buffer areas to prevent encroachment by construction vehicles and personnel. The qualified biologist shall determine the exact location of the fencing. The fencing will be strung tightly on posts set at maximum intervals of 10 feet (3 meters) and will be checked and maintained weekly until all construction is complete. The buffer zone established by the fencing will be marked by a sign stating:

   "This is habitat of [list rare plant(s)] and must not be disturbed. This species is protected by [the Endangered Species Act of 1973, as amended / California Endangered Species Act / California Native Plant Protection Act]."

3. As required by the CDFW *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural*

Communities, a qualified botanist shall determine the potential presence and distribution of sensitive natural communities.

4. If direct impacts on special-status plants cannot be avoided, the project applicant shall prepare a plan for the County's review minimizing the impacts by one or more of the following methods: (1) salvage and replant plants at the same location following construction; (2) salvage and relocate the plants to a suitable off-site location with long-term assurance of site protection; (3) collect seeds or other propagules for reintroduction at the site or elsewhere; or (4) payment of compensatory mitigation, e.g., to a mitigation bank. As necessary, all necessary approvals from USFWS/CDFW will be obtained for any impacts to special-status plant species protected under FESA or CESA.

5. The success criterion for any seeded, planted, and/or relocated plants shall be full replacement at a 1:1 ratio after five years. Monitoring surveys of the seeded, planted, or transplanted individuals shall be conducted annually for a minimum of five years to ensure that the success criterion can be achieved at year five. Monitoring reports shall be submitted to the County. If it appears the success criterion would not be met after five years, contingency measures may be applied. Such measures shall include but are not limited to additional seeding and planting; altering or implementing weed management activities; or introducing or altering other management activities.

BR-1c: Avoid, Minimize, and Mitigate for Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

1. Implement Mitigation Measure BR-1a (Construction Best Management Practices)

    a. Federally listed vernal pool branchiopod species shall be included in the WEAP discussed under "Training of Mining and Construction Staff" in Mitigation Measure BR-1a.

2. Unless a smaller buffer is approved through formal consultation with USFWS, construction fencing shall be installed a minimum of 250 feet from the delineated wetland edge of any potentially suitable aquatic habitats (e.g., vernal pools, seasonal wetlands) for vernal pool fairy shrimp and vernal pool tadpole shrimp. All construction and operations activities are prohibited within this buffer area. If total avoidance is achieved, no further action is required.

3. If avoidance, as described above, is not feasible, implement Mitigation Measure BR-3 to achieve the performance standard of no net loss of State and Federally Protected Wetlands, including vernal pool habitat acreage, function, and values for vernal pool fairy shrimp and vernal pool tadpole shrimp. Direct and indirect effects to on-site suitable aquatic habitats that may support federally listed vernal pool branchiopods shall be offset through on-site preservation and/or the purchase of tadpole shrimp and fairy shrimp species preservation credits from a USFWS-approved in-lieu fee program or

other USFWS-approved conservation or mitigation bank. These effects and compensation will be quantified in the Aquatic Resources Mitigation Plan provided by the project applicant. The mitigation ratios shall, at minimum, comply with applicable mitigation ratios in terms and conditions of biological opinion issued by USFWS pursuant to section 7 of the Endangered Species Act.

BR-1d: Avoid, Minimize, and Mitigate for Impacts on Valley Elderberry Longhorn Beetle (VELB) and Their Habitat

In order to reduce project impacts to the VELB habitat to a less than significant level the following mitigation measures, consistent with USFWS Conservation Guidelines for the Valley Elderberry Longhorn Beetle, will be required:

1. Worker Training:

    a. Implement Mitigation Measure BR-1a (Construction Best Management Practices)

        i. This species shall be included in the WEAP discussed under "Training of Mining and Construction Staff" in Mitigation Measure BR-1a

2. Avoidance:

    a. Unless otherwise approved through consultation with USFWS as outlined below in this mitigation measure, temporary construction fencing and flagging shall be installed at least 165 feet outside the edge of the driplines of the elderberry plants. In areas where encroachment within the 165-foot buffer has been approved by USFWS, provide a minimum setback of at least 20 feet from the dripline of each elderberry plant and provide documentation of USFWS approval of the reduced setback.

    b. Timing. All project-related activities that could occur within 165 feet of an elderberry plant shall be conducted outside of the flight season of the valley elderberry longhorn beetle (i.e., March through July) to the maximum extent feasible.

    c. Trimming. Trimming may remove or destroy valley elderberry longhorn beetle eggs and/or larvae and may reduce the health and vigor of the elderberry plant. Therefore, to avoid and minimize direct impacts to valley elderberry longhorn beetle, trimming shall occur between November and February and shall avoid the removal of any branches or stems that are greater than 1 inch in diameter. Measures to address regular and/or large-scale maintenance (trimming) shall be established and approved by USFWS.

d. Mowing. Mechanical weed removal within the dripline of any elderberry plant shall be limited to the season when adult valley elderberry longhorn beetles are not active (i.e., August through February) and shall avoid damage to the elderberry plant.

e. Construction Monitoring. A qualified biologist shall monitor mining activities if work would occur within the 165-foot avoidance buffer to ensure that all avoidance and minimization measures are implemented, as applicable. The amount and duration of monitoring shall depend on the project specifics and shall be discussed with USFWS.

3. Compensation for Impacts to Elderberry:

    a. Prior to ground-disturbing activities within the 165-foot buffer area (or lesser buffer, as approved by USFWS) established around the elderberry plants, the project applicant shall consult with USFWS to determine the appropriate type and amount of compensatory mitigation required. The project applicant shall mitigate for the loss of elderberry plants on the site to the satisfaction of the USFWS and shall obtain any/all applicable permit(s) from the USACE and the USFWS.

BR-1E: Avoid, Minimize, and Mitigate for Impacts on Western Spadefoot

1. Implement Mitigation Measure BR-3

2. Implement Mitigation Measure BR-1a (Construction Best Management Practices)

    a. Western Spadefoot shall be included in the WEAP discussed under “Training of Mining Construction Staff” in Mitigation Measure BR-1a.

    b. In addition, if erosion control (described in Mitigation Measure BR-1a) is implemented, non-entangling erosion control material shall be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material shall be used to ensure that western spadefoots are not trapped (i.e., no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

3. Avoid Aquatic Habitat Where Feasible or Implement Work Window. Where feasible, temporary construction fencing shall be installed a minimum of 250 feet from the delineated wetland edge of any potentially suitable aquatic habitats (e.g., vernal pools, seasonal wetlands) for western spadefoot. All construction and operations activities are prohibited within this buffer area. If avoidance of potential aquatic habitats, as described, is not feasible, project ground-disturbing activities within such areas (including overland driving of

vehicles and equipment) shall be restricted to the Western Spadefoot Work Window unless otherwise provided in this measure (see below).

4. Western Spadefoot Work Window. To the extent feasible, project ground-disturbing activities (including overland driving of vehicles and equipment) within suitable habitat for western spadefoot (e.g., grassland, woodland) shall occur outside of this species' breeding and dispersal seasons (i.e., work to occur after May 15 and before October 15).

5. Pre-construction Survey. If project ground-disturbing activities must be implemented in potentially suitable habitat for this species during the breeding and dispersal season (October 15 to May 15), activities shall not start until 30 minutes after sunrise and must be completed 30 minutes prior to sunset. In addition, a qualified biologist shall conduct a pre-construction survey of the active work areas (including access roads) for western spadefoot prior to initial ground disturbance and prior to work activities in mornings following measurable precipitation events. The survey will include searching small mammal burrows, crevices, and other potential refugia, as well as underneath equipment and inside uncapped stored pipes that are 3 cm (1.2 inches) or greater in diameter. Construction may commence once the biologist has confirmed that no spadefoots are in the work area. If western spadefoot is encountered, refer to Spadefoot Encounter Protocol, below.

6. Construction Monitoring. If project ground-disturbing activities must be implemented in potentially suitable habitat for this species during the breeding and dispersal season (October 15 to May 15), a qualified biologist experienced with western spadefoot identification and behavior shall monitor initial ground-disturbing activities within the mining area. The qualified biologist shall be on-site daily while initial construction-related activities are taking place and shall inspect the area for these species every morning prior to construction activities. The qualified biologist shall also train construction personnel on the required species avoidance procedures, and correct protocols in the event that a western spadefoot enters an active construction zone. If western spadefoot is encountered, refer to Spadefoot Encounter Protocol, below.

7. Spadefoot Entrapment Avoidance. All excavated steep-walled holes or trenches more than six inches deep shall be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks (maximum 2:1 slope) at the end of each workday or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes or trenches shall be inspected by the qualified biologist each morning prior to and each evening after work activities for the day to ensure that no wildlife has become entrapped and/or to relocate any wildlife that may have become trapped to suitable habitat outside the construction area; relocation would take place only by a qualified biologist with appropriate handling permits. All construction pipes, culverts, similar structures, construction equipment, and

construction debris left overnight within potential habitat shall be inspected for western spadefoot by the qualified biologist prior to being moved. If western spadefoot is encountered, refer to protocol, below.

8. Spadefoot Encounter Protocol. If a western spadefoot is encountered during project activities, the qualified biologist shall notify CDFW and any other appropriate responsible Agency (e.g., USFWS if the species has become federally listed) immediately. Project activities shall be suspended within a 100-foot radius of the animal until the animal moves out of the work area on its own volition, or is relocated by a qualified biologist with appropriate handling permits. Prior to relocation, the qualified biologist shall notify CDFW and USFWS (if relevant) to determine the appropriate procedures related to relocation. If the animal is handled, a report shall be submitted within one business day to CDFW and USFWS (if relevant) that includes the date, location, habitat description, circumstances requiring the animal to be handled, and any additional measures taken to further protect western spadefoot. Any worker who inadvertently injures or kills a western spadefoot or who finds any individual(s) dead, injured, or entrapped must immediately report the incident to the qualified biologist. The biologist shall report any take (i.e., injury or mortality) of listed species to CDFW and USFWS (if relevant) immediately.

BR-1f: Avoid, Minimize, and Mitigate for Impacts on Western Pond Turtle

1. Implement Mitigation Measure BR-3

2. Implement Mitigation Measure BR-1a (Construction Best Management Practices)

    a. Western Pond Turtle shall be included in the WEAP discussed under “Training of Mining and Construction Staff” in Mitigation Measure BR-1a.

    b. In addition, if erosion control (described in Mitigation Measure BR-1a) is implemented, non-entangling erosion control material shall be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material shall be used to ensure that western pond turtles are not trapped (i.e., no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

3. Avoid Aquatic Habitat Where Feasible. Where feasible temporary construction fencing shall be installed a minimum of 300 feet from the potential suitable aquatic habitat for northwestern pond turtle (e.g., streams, ponds, freshwater emergent wetlands, etc.). All construction and operations activities shall be prohibited within this buffer area, or implement the Western Pond Turtle Work Window (see below).

4. Western Pond Turtle Work Window. For any project-related activities that occur within 300 feet of suitable aquatic habitat, project ground-disturbing activities shall, to the maximum extent feasible, be conducted outside of western pond turtle's active season (i.e., work to occur after May 1 and before September 15). If project activities must be implemented during the breeding and dispersal season, they shall not start until 30 minutes after sunrise and must be completed 30 minutes prior to sunset.

5. Western Pond Turtle Pre-Construction Survey. A qualified biologist shall conduct a pre-construction survey for western pond turtle within 48 hours prior to the start of construction activities within 300 feet of suitable aquatic habitat. Concurrently with the pre-construction survey, assessments for active nesting pits and/or wintering site (e.g., burrows) shall be conducted and any identified sites shall be delineated with high visibility flagging or fencing and avoided during construction activities.

6. Western Pond Turtle Encounter Protocol. If a western pond turtle, active nesting pits, and/or active wintering sites are encountered during the pre-construction survey a qualified biologist shall be present during grubbing and clearing activities in suitable habitat to monitor for western pond turtle. If a turtle is observed in the active construction zone, project activities shall be suspended within a 100-foot radius of the animal until the animal moves out of the work area on its own volition. If necessary, the qualified biologist shall notify CDFW to determine the appropriate procedures related to relocation to nearby suitable habitat. If the animal is handled, a report shall be submitted within one business day to CDFW that includes the date, location, habitat description, circumstances requiring the animal to be handled, and any additional measures taken to further protect western pond turtle. Any worker who inadvertently injures or kills a western pond turtle or who finds one dead, injured, or entrapped must immediately report the incident to the qualified biologist.

7. Work in Aquatic Habitat, Dewatering and Exclusion. If avoidance of potential aquatic habitats, as described above, is not feasible, scheduled work activities when habitat is naturally dry (e.g., in seasonal aquatic habitats). If project activities must occur in suitable aquatic habitat that is wetted, the following shall be implemented: The wetted aquatic habitat shall be dewatered and remain dry and absent of aquatic prey (e.g., crustaceans and other aquatic invertebrates) for a minimum of 15 days prior to the initiation of construction activities. If complete dewatering is not possible, CDFW shall be contacted to determine what additional measures may be necessary to minimize effects to western pond turtle. After aquatic habitat has been dewatered for a minimum of 15 days, exclusion fencing shall be installed extending a minimum of 300 feet into adjacent uplands to isolate both the aquatic and adjacent upland habitat within work area boundaries. Exclusionary fencing shall be erected 36 inches above ground and buried at least 6 inches below the ground to prevent any western pond turtles from

attempting to burrow or move under the fence into the work area. In addition, high-visibility fencing shall be erected to identify work area limits and to protect adjacent habitat from encroachment of personnel and equipment. Western pond turtle habitat outside exclusionary fencing shall be avoided by all construction or maintenance personnel. The fencing and work area shall be inspected by a qualified biologist before the start of each workday and periodically throughout each workday to ensure that the fencing is intact and that no western pond turtles have entered the work area. Fencing shall be maintained by the contractor or maintenance entity until completion of the work, upon which it shall be completely removed. If, after exclusion fencing and dewatering, western pond turtles are found within the work area, the qualified biologist shall contact CDFW to discuss the next best steps such as the relocation of the individual(s) to suitable aquatic habitat outside the exclusion fencing.

BR-1G: Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk

1. During the year of project commencement, and each subsequent year in which project activities occur during the nesting season (e.g., March 1 through September 15), a qualified biologist shall conduct preconstruction surveys in accordance with *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Tech. Advisory Committee 2000); to meet the minimum level of protection for the species, surveys shall be required during the two (2) survey periods immediately preceding the commencement of construction activities. If no active nests are found during the focused survey, no further mitigation will be required.

2. Consistent with CDFW's recommendations identified in their Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California (CDFG 1994), if nesting Swainson's hawk are identified within a 0.5-mile of the project site during preconstruction Swainson's nesting surveys described above or at any point during project activities, ongoing monitoring by a qualified biologist shall be required to ensure there are no unauthorized impacts to this species and its habitat; typically a 0.25- to 0.5-mile buffer of an active nest site shall be implemented during the nesting season (e.g., March 1 through September 15) until the young have fledged to avoid agitation to the nest. The requirement for monitoring shall be determined in consultation with CDFW biologists after they are notified of any nesting Swainson's hawk).

3. If impacts on Swainson's hawk individuals cannot be fully avoided, obtain an incidental take permit from CDFW for anticipated take of Swainson's hawk nesting sites and foraging habitat and for potential project-related take of individuals.

4. The project proponent shall avoid removal of known active Swainson's hawk nest trees to the maximum extent practicable. "Active Swainson's hawk

nest(s)" are defined in the *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California* (CDFW, 1994), as "used during one or more of the last 5 years". Compensation shall be provided for the permanent loss of Swainson's hawk nesting habitat, including removal of known active nest sites/trees (if the removal of known active nest sites/trees cannot be feasibly avoided), to achieve a performance standard of no net loss of habitat acreage, function and values to Swainson's hawk through implementation of a Tree Resource Revegetation Plan (see Mitigation Measure BR-2). A Tree Resource Compliance and Mitigation Memorandum has been drafted by the Applicant for this purpose and shall be updated to meet the requirements identified herein for the Tree Resource Revegetation Plan for approval of the County prior to project-related tree removal.

BR-1H: Avoid and Minimize Impacts on Burrowing Owl (BUOW)

1. Project proponent shall conduct a BUOW survey over all suitable habitat present within the project area. BUOW surveys shall be conducted by a qualified biologist in accordance with the protocol described in the *Staff Report on Burrowing Owl Mitigation* (CDFW, March 7, 2012). If possible, surveys should be conducted during both the breeding (February 1 – August 31) and non-breeding seasons (September 1 – January 31) immediately preceding the planned start of construction activities to ascertain the seasonal residency status of any owls occupying the site. The presence of BUOW or their sign anywhere on the site, or within a 500-foot accessible radius around the project site, shall be recorded and mapped. Surveys shall disclose all burrows and occurrence of signs of BUOW on the project site and within the 500-foot buffer. Results of the survey shall be submitted to the County.

2. During the breeding season (February 1 to August 31), surveys shall document whether BUOW are nesting in or within 500 feet of the Project area. During the non-breeding season (September 1 to January 31), surveys shall document whether BUOW are using habitat in or directly adjacent to any area to be disturbed. Survey results shall only be valid for the season (breeding or non-breeding) during which the survey was conducted. If a lapse in project-related work of fifteen (15) calendar days or longer occurs, another focused survey shall be conducted and the results submitted to the County before project work can be reinitiated. If a BUOW or evidence of presence at or near a burrow entrance is found to occur within 500 feet of the project site, the following measures shall be implemented:

    a. If BUOW are found during the non-breeding season (approximately September 1 to January 31), the project proponent shall establish a minimum 160-foot (50-meter) buffer zone around active burrows. The buffer zone shall be flagged or otherwise clearly marked. Measures such as visual screens may be used to further reduce the buffer with CDFW approval and provided a qualified biologist confirms that such measures do not cause agitated behavior.

b. If BUOW are found during the breeding season (approximately February 1 to August 31), the project proponent shall:

    i. Avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young (occupation includes individuals or family groups foraging on or near the site following fledging).

    ii. Establish a minimum 500-foot non-disturbance buffer zone around nests, unless otherwise approved by the County in writing, in consultation with CDFW. The buffer zone shall be flagged or otherwise clearly marked. Should construction activities cause the nesting bird to vocalize, make defensive flights at intruders, or otherwise display agitated behavior, then the exclusionary buffer will be increased such that activities are far enough from the nest so that the bird(s) no longer display this agitated behavior. Construction shall only occur within the 500-foot buffer zone during the breeding season if a qualified biologist monitors the nest and determines that the activities do not disturb nesting behavior, or the birds have not begun egg-laying and incubation, or that the juveniles from the occupied burrows have fledged and moved off site. Any modifications to this buffer shall be approved by the County, in consultation with CDFW prior to its implementation. The buffer reduction request shall include relevant information and/or propose new measures to justify the buffer reduction. The buffer area must be clearly marked to prevent project-related activities from occurring within the buffer zone.

3. If eviction of BUOW is necessary, the following measure shall apply:

    a. If after all applicable avoidance and minimization measures are implemented and the project proponent needs to evict BUOW, an Incidental Take Permit (ITP) shall be obtained for the activity and a BUOW eviction plan shall be developed by a qualified biologist for the County's review and approval, in consultation with CDFW. This plan, including its proposed mitigation, shall be consistent with the most recent available guidelines (e.g., *2012 Staff Report on Burrowing Owl Mitigation*). Burrow eviction shall only be conducted during the non-breeding season for burrows located in the project footprint, and in limited instances within a buffer zone around the project site, as determined by the County in consultation with CDFW after all avoidance and minimization measures have been exhausted.

BR-1I: Avoid, Minimize, and Mitigate for Impacts on Tricolored Blackbird

1. To the maximum extent feasible, clearing, grubbing, removal, and/or disturbance (e.g., trimming) to any vegetation that is suitable tricolored blackbird nesting habitat shall be performed outside of the nesting season (September through March) to avoid impacts to nesting birds. If vegetation disturbance/removal cannot be avoided during the nesting season for this species, the following measures shall be implemented.

2. A qualified biologist shall conduct a preconstruction survey for nesting tricolored blackbird approximately two days prior to vegetation or tree removal or ground-disturbing activities during the nesting season (approximately April through August). The survey shall cover the limits of mining activities and suitable nesting habitat within 500 feet.

3. If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance (i.e., non-disturbance) buffer from the active nest. The buffer distance for tricolored blackbird shall generally be 500 feet and shall be determined based on factors such as topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of mining shall be established in the field with flagging, fencing, or other appropriate barriers to avoid active nests. Mining limits shall be based on the biologist-defined appropriate buffer distance and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.

4. If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days elapse between the survey and vegetation removal activities.

5. If an active nest is identified within 500 feet of the work area after mining has started, work within 500 feet of the nest shall be suspended until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by mining. Appropriate measures may include a no-disturbance buffer until the birds have fledged, limitations on mining activities that generate substantial vibration and/or noise, and/or full-time monitoring by a qualified biologist during mining activities conducted near the nest.

BR-1J: Avoid, Minimize, and Mitigate for Impacts on Nesting Raptors

1. A qualified biologist shall conduct a survey for nesting raptors if vegetation/tree removal or ground-disturbing activities is to commence within 1,000 feet of suitable raptor nesting habitat between February 1 and September 15. The survey shall cover the limits of construction and accessible suitable nesting habitat up to 1,000 feet from the project boundary. The survey shall occur within 30 days of the date that vegetation/tree removal

or ground-disturbing activities will encroach within 1,000 feet of suitable habitat and a final survey no later than 5 days prior to scheduled activity.

2. The biologist shall supply a brief written report (including date, time of survey, survey method, name of surveyor and survey results) to the Environmental Coordinator prior to ground disturbing activity. If no active nests are found during the survey, no further mitigation will be required.

3. If any active nests are found, the Environmental Coordinator and CDFW shall be contacted to determine appropriate avoidance/protective measures, such as buffers and onsite biologist for monitoring. Whichever avoidance and protective measures are chosen, those measures shall be implemented prior to the commencement of ground-disturbing activities.

BR-1K: Avoid, Minimize, and Mitigate for Impacts on Migratory Nesting Birds

1. A qualified biologist shall conduct a survey for nesting migratory birds if vegetation/tree removal or ground-disturbing activities is to commence within 500 feet of suitable nesting habitat between February 1 and August 31. The survey shall cover the limits of mining and accessible suitable nesting habitat up to 500 feet from the project boundary. The survey shall occur no more than 7 days prior to ground-disturbing activities.

2. If trees are to be removed, removal should be during the period of September through January, in order to avoid the nesting season. Any trees that are removed during the nesting season, which is February through August, will be surveyed by a qualified biologist and will only be removed if no nesting migratory birds are found.

3. If active nest(s) are found in the survey area, a non-disturbance buffer, the size of which shall be determined by a qualified biologist, will be established and maintained around the nest to prevent nest failure. All mining activities will be avoided within this buffer area until a qualified biologist determines that nestlings have fledged.

BR-1L: Avoid, Minimize, and Mitigate for Impacts on Bats

1. Habitat Assessment. A qualified biologist with education and experience in bat biology and identification, shall conduct a habitat assessment for potentially suitable bat habitat within six months of project activities for each phase of the project. If the habitat assessment reveals suitable bat habitat, then a qualified bat biologist shall do a presence/absence survey during the peak activity periods. If bats are present, then the qualified biologist shall submit a bat avoidance plan to CDFW for review and approval.

2. Bat Avoidance Plan. The bat avoidance plan should identify: 1) the location of the roosting sites; 2) the number of bats present at the time of assessment (count or estimate); 3) species of bats present; 4) the type of roost (e.g. day/night, maternity, hibernaculum, bachelor); and 5) species specific

measures to avoid and minimize impacts to bats. The bat avoidance plan shall evaluate the length of time of disturbance, equipment noise, and type of habitat present at the project.

3. No Disturbance Buffer. If during the habitat assessment the qualified bat biologist identifies a bat roost within the Project boundary that is not proposed for demolition or removal, then a no disturbance buffer shall be established around the roost in consultation with CDFW. The width of the buffer should be determined by the qualified bat biologist based on the bat species, specific site conditions, and level of disturbance. The buffer should be maintained until the qualified bat biologist determines that the roost is no longer occupied.

4. Roost Removal Timing. The project that results in the loss or modification of the original roost structure should be implemented outside hibernation and maternity seasons, November 1 through February 1, and April 1 through August 31, respectively.

5. Bat Exclusion. If an active bat roost is found in a tree or structure that must be removed, the qualified bat biologist should prepare a Bat Exclusion Plan for the passive exclusion of the bats from the roost. Exclusion shall be scheduled either (1) between March 1 and March 31, prior to parturition of pups; or (2) between September 1 and October 31 prior to hibernation (or prior to evening temperatures dropping below 45°F and onset of rainfall greater than ½ inch in 24 hours). The qualified bat biologist shall confirm the absence of bats prior to the start of construction. If replacement structures are considered, they shall be designed to accommodate the bat species they are intended for. Use of replacement structures shall be incorporated into the Bat Exclusion Plan. The Bat Exclusion Plan shall be submitted to CDFW for review and approval a minimum of 10 days prior to the installation of exclusion devices. CDFW does not support eviction of bats during maternity or hibernation periods.

6. Tree Removal. Removal of trees that qualify as suitable bat habitat shall be scheduled either (1) between approximately March 1 and March 31, prior to parturition of pups; or (2) between September 1 and October 31 prior to hibernation (or prior to evening temperatures dropping below 45°F and onset of rainfall greater than ½ inch in 24 hours). Removal of trees containing suitable bat habitat should be conducted under the supervision of a qualified bat biologist.

BR-1M: Avoid, Minimize, and Mitigate for Impacts on American Badger

1. A qualified biologist shall conduct focused surveys for American badger dens within two weeks prior to ground-disturbing activities in suitable habitat (i.e., undeveloped grassland, blue oak woodlands, and seasonally inundated wetlands/waters). The survey shall cover the limits of ground disturbance and a 100-foot buffer. Any potentially active American badger dens located during the survey that show signs of recent activity shall be evaluated (typically with remote cameras) to determine activity status.

2. If an active American badger den is detected during the breeding season (typically from March through May), then prior to mining activities, the qualified biologist shall establish a 100-foot no-disturbance buffer (e.g., staking, flagging, or similar measures) around the den. The buffer shall be maintained until the qualified biologist determines that the den is no longer active, and the young are no longer dependent upon the den for survival. If a natal den site cannot be avoided throughout the life of the project (including operations and maintenance), destruction of the natal den burrow shall only proceed after the natal den is no longer active and no badgers are present within the burrow.

3. If construction or mining occurs during the non-breeding period (i.e., typically from June through February) and an active non-natal den is found in or immediately adjacent to the mining footprint, a qualified biologist shall attempt to trap or flush the individual (e.g., passive exclusion with one-way doors) and relocate it to suitable habitat away from construction. After exclusion/relocation is completed, the vacated or unoccupied den can be excavated, and mining can proceed.

BR-1N: Avoid, Minimize, and Mitigate for Impacts on Crotch's Bumble Bee

1. Initial ground-disturbing activities (e.g., grading, staging) shall take place between September 1 and March 31 (i.e., outside of the colony active period), if feasible, to minimize impacts on nesting Crotch's bumble bees. If work occurs during this period, no additional measures are required.

2. If completing all initial ground-disturbing work between September 1 and March 31 is not feasible, a qualified biologist with 10 or more years of experience conducting biological resource surveys within California, and with field training in bumble bee identification, shall conduct pre-construction surveys for Crotch's bumble bees in the area proposed for impact no more than 14 days prior to the commencement of construction activities. Surveys shall be conducted between April 1 and July 31. The survey (or at least one survey if more than one are carried out) shall occur during that time period but also while at least one of the five most preferred floral genera is abundantly in-flower onsite (i.e., *Asclepias, Salvia, Lupinus, Vicia,* and *Acmispon spp.*).

    a. The survey shall occur during the period from one hour after sunrise to two hours before sunset, with temperatures between 65 degrees and 90 degrees Fahrenheit, and with sustained wind below 8 miles per hour. Surveying shall be suspended during rain for one hour afterward. If the survey timing makes adherence to those conditions infeasible, survey work shall occur on days within a one-week period that are closest to the temperature and wind ranges stated above.

    b. The survey duration shall be commensurate with the extent of floral resources (which represent foraging habitat) present within the area proposed for impact and the level of effort shall be based on the metric

of a minimum of one person-hour of surveying for active bees per three acres of suitable floral resources/foraging habitat (not including handling or note-taking time). Suitable habitat is defined as flowering patches of at least 5 percent relative cover of any of the five genera noted above, plus *Centaurea, Cirsium,* and *Eschscholzia* spp. In addition, survey efforts shall include the meandering transects that are traversed in finding or walking to known patches of suitable habitat.

c. Diagnostic methodology may include either (1) non-lethal capture and chilling, with diagnostic photography of all bee species and counts of their numbers. Methods requiring use of sterilized vials, limitations on handing periods before and during chilling, and site of release shall follow USFWS (2019) as modified by CABBA training and the CABBA Participant Handbook for California species. Capture-based survey requires CDFW scientific collection permit (and memorandum of understanding for listed species); or (2) photographic survey of active bees. The equivalent of a 300-mm lens (DX format) is typically necessary for this purpose. Survey documentation shall include images of all *Bombas* species that are observed and counts of each.

d. If Crotch's bumble bees are observed, the biologist shall attempt to locate nests by tracking bee movements, looking for concentrated Crotch's bumble bee activity near the ground surface or objects that have suitable nest cavities, or (under windless conditions) listening for humming that indicates a concentration of individuals.

e. Survey documentation shall include dates, times, and weather conditions of survey activity, a map of survey tracks, description of any suitable foraging habitat and other floral resources present, a description of observed bumble bee activity, a list and counts of bumble bee species observed, and a map of locations (within 5 meter accuracy or less) of any nests that are found. The report shall be submitted to the County prior to the commencement of construction activities.

3. If Crotch's bumble bees are not detected during the pre-construction survey, or the bumble bees located are definitively identified as not special-status species, no further mitigation or coordination with the County and/or CDFW will be required.

4. If any sign(s) of a Crotch's bumble bee nest or a nest of a species that could not be definitively identified as not being a special-status bumble bee are observed, then construction shall not commence until either, 1) the bumble bees present are positively identified as not special-status by an experienced bumble bee taxonomist, or 2) the completion of coordination with CDFW to identify appropriate mitigation measures, which may include, but not be

limited to, waiting until the colony active season ends, establishment of nest buffers, or obtaining an Incidental Take Permit (ITP) from CDFW.

5. If, after coordination with CDFW, impacts to Crotch's bumble bee cannot be avoided, the project applicant shall obtain an ITP from CDFW prior to initiation of ground disturbing activities, and the project applicant shall implement all conditions identified in the ITP. Mitigation required by the ITP may include translocating nesting substrate in accordance with the latest scientific research to another suitable location that supports floral resources similar or superior to the impact area, enhancing floral resources (i.e., site restoration) on areas of the project site that will remain appropriate habitat, and/or other measures specified by the ITP.

BR-3: Avoid, Minimize, Restore, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters

1. Implement standard construction BMPs provided in Mitigation Measure BR-1a, in particular: Construction Fencing, Erosion Control, Equipment Storage and Fueling, Dust Control, Soil Compaction, and Revegetation to protect adjacent wetlands and other waters from unauthorized encroachment.

    a. Jurisdictional aquatic resources shall be included in the WEAP discussed under" Training of Mining and Construction Staff" in Mitigation Measure BR-1a.

2. If the final approved project does not avoid all State and federally-protected wetlands and other waters, the applicant must submit a jurisdictional delineation of waters of the U.S. and/or State to the USACE prior to approval of the work authorization permit, and subsequently obtain all necessary permits for impacts on jurisdictional features. These typically include the following permits: CWA Section 404 Nationwide or Individual Permit, CWA Section 401 Water Quality Certification, Waste Discharge Requirements from the RWQCB, CFGC Section 1600 Lake and Streambed Alteration Agreement. All conditions of any acquired permits shall be implemented. Concurrently, in coordination with the USACE, RWQCB and/or CDFW, as the case may be, an Aquatic Resources Mitigation Plan shall be prepared and implemented that includes measures to avoid and minimize impacts to aquatic resources, and compensation for any unavoidable impacts to jurisdictional resources to achieve no net loss of State and federally protected wetlands and other waters. The Aquatic Resources Mitigation Plan may include requirements such as:

    a. Directing construction traffic along access roads until they reach active work sites to limit soil compaction and disturbance to the site.

    b. Restricting unavoidable temporary construction and maintenance activities within wetlands/other waters (e.g., driving vehicles/equipment through jurisdictional aquatic resources) to occur during the dry season

or dewatered areas that have been dry for a minimum of 15 days, and implementing soil compaction prevention via use of rubber mats or other similar materials to protect the soil surface from and distribute the weight of equipment/vehicles when driving over wetlands/other waters for the purposes other than vegetation maintenance.

c. Restricting the use of heavy equipment within wetlands/other waters within the mining footprint to occur under dry conditions (e.g., during dry season or so as not to form ruts of 6 inches or more) or dewatered areas.

d. Delineation of the work site boundaries such that no work occurs outside the defined impact footprint of the mining area.

e. Hardpan/ Duripan Protection. To protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to result in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer when aggregate extraction is complete.

f. Restoring all temporary impacts to wetlands to pre-existing conditions.

g. Establishing wetland avoidance buffers to the maximum extent feasible (e.g., typically a minimum of 50 feet although may be reduced to 10 feet in some circumstances) with flagging, staking, or other appropriate barriers.

h. Developing final project designs to maintain existing on-site drainage patterns and ensure no reduction or increase in existing surface water flow off-site into adjacent lands.

i. For all work conducted in or within 50 feet of aquatic resources, a qualified biologist shall be on-site to monitor construction activities to ensure avoidance and minimization measures are properly implemented to protect sensitive aquatic resources and that no un-authorized impacts occur.

3. Compensation shall be provided for project-related impacts to State and federally protected wetlands and other waters to achieve no net loss of the acreage, function, and values of jurisdictional resources. Compensatory mitigation requirements shall apply to residual impacts on all wetland and water features, whether preliminarily identified as potentially jurisdictional or not. Compensatory mitigation shall be approved by USACE, RWQCB and/or CDFW, as the case may be, as part of any required permitting processes. Potential compensation options may include one or more of the following: on-site restoration, off-site preservation, or purchasing mitigation credits from an

agency-approved wetlands mitigation bank, paying an agency-approved in-lieu fee, and/or developing conservation lands to compensate for permanent loss of resources. Mitigation ratios are expected to be no less than 1:1 and shall be determined during the permitting process.

BR-5A: Avoid, Minimize, and Mitigate for Permanent Impacts to Native Trees

Consistent with Sacramento County Policy CO-140, compensation for the unavoidable loss of native oak tree canopy area as a result of project construction shall be provided by the project applicant to achieve a performance standard of no net loss, defined as a minimum 1:1 preservation to impact ratio of native oak tree canopy area lost, through one or more of the following options. The removal of, and compensation for native oak tree canopy area shall be quantified in a Tree Resource Mitigation Plan, subject to Sacramento County review and approval.

1. Oak Preservation. On-site preservation of native oak tree canopy shall be considered as a first priority for fulfillment of this preservation mitigation requirement. For the purposes of this mitigation measure, “on-site” constitutes being within the project site, or immediately adjacent to the project site such that at least a portion of the boundary of the preservation area directly borders oak woodlands in the project site. On-site native oak tree canopy preservation shall preserve the main, central portions of consolidated and isolated groves constituting the existing canopy on-site, and provide an area on-site that compensates for canopy area lost. On-site preservation areas shall prioritize areas that provide connectivity between existing oak woodlands and forest and/or riparian habitat that may serve as potential wildlife movement corridors. The native oak canopy preservation area must be a single contiguous area on-site, adjacent to existing oak canopy to ensure opportunities for regeneration, and at least equal to the size of canopy area lost or else additional compensation as described below (i.e., off-site preservation, preservation bank credit purchase, or in-lieu fee to a tree preservation fund) shall be required to ensure no net loss.

2. If on-site mitigation cannot feasibly achieve the no net loss performance standard, off-site preservation may be considered in entirety or in combination with on-site preservation. The off-site preservation area shall meet all the following criteria to preserve, enhance, and maintain a natural woodland habitat in perpetuity.

    a. Be equal or greater in area to the total area that is included within a radius of 30 feet of the root protection zone of all trees to be removed;

    b. Be adjacent to a protected stream corridor or other preserved natural area;

    c. Support a significant number of native broadleaf trees;

d. Offer good potential for continued regeneration of an integrated woodland community;

e. Be located within the boundaries of Sacramento County; and,

f. Be within parcels immediately adjacent to and surrounding the project site parcels such that the boundary of the off-site preservation parcel(s) share a boundary, at least in part, with the project site parcel boundaries. If preservation of adjacent parcels is not feasible, then preservation shall be within mapped areas of Savannah and Blue Oak Woodland on the Habitat Component map of the Open Space Vision Diagram included in the Sacramento County General Plan.

3. A combination of on-site and off-site preservation as described above.

4. Oak tree canopy area lost shall be calculated as the total collective area of contiguous canopy cover representing the downward projection of the crown or crowns of overlapping adjacent tree canopies (i.e., outer extent of leaves and small twigs) for all native oak trees to be removed according to the County-approved final project designs. Oak tree canopy area shall be calculated using a consistent method for determining canopy area impacts as for identifying a suitable mitigation area. At the time of preparation of this environmental impact report, a total of 17.6 acres of native oak tree canopy area was estimated to be permanently lost and an equal amount would be required for preservation as described in this mitigation measure.

5. If neither on-site nor off-site preservation is sufficient to achieve the no net loss performance standard, or if the full preservation mitigation requirement cannot feasibly be accomplished with on-site and off-site preservation alone, the project applicant shall fulfill any remaining preservation mitigation requirement through either:

    a. A preservation bank credit purchase for an equivalent oak canopy area of blue oak woodland; or,

    b. A sum equivalent to the replacement cost for all unmitigated trees within the grading area shall be paid by the project applicant as an “in-lieu fee” to the County’s Tree Preservation Fund or another appropriate tree preservation fund (e.g., Sacramento Valley Conservancy). The total amount to be paid shall be based on the current cost per inch in dbh inch for all trees to be mitigated and shall be approved by Sacramento County.

6. Any on- and/or off-site preservation lands used or acquired to fulfill this compensatory mitigation requirement, shall include legal protections for protection into perpetuity (e.g., conservation easement, restrictive covenant, or other Sacramento County-approved mechanism). In addition, the project applicant shall provide funding for (1) acquisition in fee title or any legal

protections of the preservation lands, (2) initial habitat improvements (if needed), (3) long-term habitat maintenance and management of the preservation lands in perpetuity, and (4) preparation of a Preserve Management Plan that describes the preserved oak canopy resources on-site, responsible parties, management goals and objectives, management activities, and reporting requirements. The responsibilities for acquisition and management of the preservation lands may be delegated by written agreement to CDFW or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the County. Funding for on- and/or off-site preservation lands shall be estimated through preparation of a Property Analysis Record (PAR), or PAR-equivalent analysis, which is an itemized cost estimate of the initial and capital period costs and annual, ongoing costs of in-perpetuity land management.

7. Preservation as described in this measure either through on-site or off-site means, a preservation bank credit purchase, in-lieu fee, or a combination thereof representing the full mitigation requirement as identified in this mitigation measure shall be completed within 24 months from the start of project-related tree removal activities; any extension must be approved by Sacramento County. If preservation is not completed prior to the start of tree removal activities, the project applicant shall provide financial assurances to guarantee that an adequate level of funding is available to implement the acquisition, initial improvements (if needed), and long-term maintenance and management of preservation lands and/or to cover any additional mitigation options (e.g., bank credit purchase, in-lieu fees). Financial assurance shall be provided to Sacramento County prior to the issuance of a work authorization permit and can be provided in the form of irrevocable letter of credit, bond, a pledged savings account, or another form of security as approved by the County. The total amount of financial assurances shall be determined by an updated appraisal and PAR or PAR-equivalent analysis as described above.

BR-5b: Avoid, Minimize, and Mitigate for Temporary Impacts to Native Trees

With the exception of the trees removed and compensated for through Mitigation Measure BR-5a, above, all native trees on the project site, all portions of adjacent off-site native trees which have driplines that extend onto the project site, and all off-site native trees which may be impacted by implementation activities associated with this project, shall be preserved and protected as follows:

1. A circle with a radius measurement from the trunk of the tree to the tip of its longest limb shall constitute the dripline protection area of the tree. Limbs must not be cut back in order to change the dripline. The area beneath the dripline is a critical portion of the root zone and defines the minimum protected area of the tree. Removing limbs which make up the dripline does not change the protected area.

2. Chain link fencing or a similar protective barrier shall be installed one foot outside the driplines of the native trees prior to initiating project construction, in order to avoid damage to the trees and their root system.

3. No signs, ropes, cables (except cables which may be installed by a certified arborist to provide limb support) or any other items shall be attached to the native trees.

4. No vehicles, construction equipment, mobile home/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the driplines of the native trees.

5. Any soil disturbance (scraping, grading, trenching, and excavation) is to be avoided within the driplines of the native trees. Where this is necessary, an ISA Certified Arborist will provide specifications for this work, including methods for root pruning, backfill specifications and irrigation management guidelines.

6. All underground utilities and drain or irrigation lines shall be routed outside the driplines of native trees. Trenching within protected tree driplines is not permitted. If utility or irrigation lines must encroach upon the dripline, they should be tunneled or bored under the tree under the supervision of an ISA Certified Arborist.

7. If temporary haul or access roads must pass within the driplines of oak trees, a roadbed of six inches of mulch or gravel shall be created to protect the root zone. The roadbed shall be installed from outside of the dripline and while the soil is in a dry condition, if possible. The roadbed material shall be replenished as necessary to maintain a six-inch depth.

8. Drainage patterns on the site shall not be modified so that water collects or stands within, or is diverted across, the dripline of oak trees.

9. No sprinkler or irrigation system shall be installed in such a manner that it sprays water within the driplines of the oak trees.

10. Tree pruning that may be required for clearance during construction must be performed by an ISA Certified Arborist or Tree Worker and in accordance with the American National Standards Institute (ANSI) A300 pruning standards and the International Society of Arboriculture (ISA) “Tree Pruning Guidelines”.

11. Landscaping beneath the oak trees may include non-plant materials such as boulders, decorative rock, wood chips, organic mulch, non-compacted decomposed granite, etc. Landscape materials shall be kept two (2) feet away from the base of the trunk. The only plant species which shall be planted within the driplines of the oak trees are those which are tolerant of the natural semi-arid environs of the trees. Limited drip irrigation approximately twice per summer is recommended for the understory plants.

12. Any fence/wall that will encroach into the dripline protection area of any protected tree shall be constructed using grade beam wall panels and posts or piers set no closer than 10 feet on center. Posts or piers shall be spaced in such a manner as to maximize the separation between the tree trunks and the posts or piers in order to reduce impacts to the trees.

6 GREENHOUSE GAS EMISSIONS

INTRODUCTION

This chapter addresses the potential climate change impacts associated with the proposed White Rock North Mine project (project).

ENVIRONMENTAL SETTING

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Certain gases in the earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space through the atmosphere. However, infrared radiation is selectively absorbed by GHGs in the atmosphere. As a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on Earth. Anthropogenic (e.g., human caused) emissions of GHGs lead to atmospheric levels in excess of natural ambient concentrations and have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change.

The Intergovernmental Panel on Climate Change (IPCC) concluded that variations in natural phenomena, such as solar radiation and volcanoes, produced most of the warming of the earth from pre-industrial times to 1950. Some variations in natural phenomena also had a small cooling effect. From 1950 to the present, increasing GHG concentrations resulting from human activity, such as fossil fuel burning and deforestation, have been responsible for most of the observed temperature increase (IPCC, 2021).

Global surface temperature has increased by approximately 1.96 degrees Fahrenheit (°F) over the last 140 years (IPCC, 2021); the likely total human-caused global surface temperature increase is 1.93°F. The rate of increase in global average surface temperature has not been consistent; the last four decades have warmed at a much faster rate per decade (IPCC, 2021).

During the same period when increased global warming has occurred, many other changes have occurred in other natural systems. Sea levels have risen; precipitation patterns throughout the world have shifted, with some areas becoming wetter and others drier; snowlines have increased elevation, resulting in changes to the snowpack, runoff, and water storage; and numerous other conditions have been observed.

Although it is difficult to prove a definitive cause-and-effect relationship between global warming and other observed changes to natural systems, there is a high level of confidence in the scientific community that these changes are a direct result of increased global temperatures caused by the increased presence of GHGs in the atmosphere (IPCC, 2021).

Principle Greenhouse Gases and Sources

GHGs are present in the atmosphere naturally, are released by natural and anthropogenic (human-caused) sources, and are formed from secondary reactions taking place in the atmosphere. Natural sources of GHGs include the respiration of humans, animals, and plants; decomposition of organic matter; volcanic activity; and evaporation from the oceans. Anthropogenic sources include the combustion of fossil fuels by stationary and mobile sources, waste treatment, and agricultural processes. The following are the principal GHG pollutants that contribute to climate change and their primary emission sources:

- Carbon Dioxide (CO_2): Natural sources of CO_2 include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; and evaporation from oceans. Anthropogenic (human) sources include burning of coal, oil, natural gas, and wood.

- Methane (CH_4): CH_4 is emitted during the production and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

- Nitrous Oxide (N_2O): N_2O is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests.

- Fluorinated gases: These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes called High Global Warming Potential (High GWP) gases:

    - Chlorofluorocarbons (CFCs): These GHGs are used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants.

    - Perfluorinated Chemicals (PFCs): PFCs are emitted as by-products of industrial processes and are also used in manufacturing.

    - Sulfur hexafluoride (SF6): This is a strong GHG used primarily as an insulator in electrical transmission and distribution systems.

- Hydrochlorofluorocarbons (HCFCs): These have been introduced as temporary replacements for CFCs and are also GHGs.

- Hydrofluorocarbons (HFCs): These were introduced as alternatives to ozone- depleting substances in serving many industrial, commercial, and personal needs. HFCs are GHGs emitted as by-products of industrial processes and are also used in manufacturing.

GHGs are not monitored at local air pollution monitoring stations and do not represent a direct impact to human health. Rather, GHGs generated locally contribute to global concentrations of GHGs, which results in changes to the climate and environment.

Global Warming Potential

GWP is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time the gas remains in the atmosphere (its "atmospheric lifetime"). The GWP of each gas is measured relative to CO_2. Therefore, CO_2 has a GWP of 1. GHGs with lower emissions rates than CO_2 may still contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO_2 (i.e., high GWP). For example, SF_6, while comprising a relatively small fraction of the total GHGs emitted annually worldwide, has a GWP of 22,800, meaning that 1 ton of SF6 has the same contribution to the greenhouse effect as approximately 22,800 tons of CO_2. The concept of CO_2 equivalence (CO_2e) is used to account for the different GWP potentials of GHGs. GHG emissions are typically measured in terms of pounds or metric tons of CO_2e and are often expressed in MT CO_2e.

Climate change is a global issue because GHGs can have global effects, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern (see Chapter 4 "Air Quality"). Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years), or long enough to be dispersed around the globe.

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The IPCC's 2021 Synthesis Report indicated that warming of the climate system is unequivocal and, since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, and rising sea levels (IPCC, 2021).

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already

affecting California. As noted in the Sacramento Valley Regional Report of the California's Fourth Climate Change Assessment, climate change is expected to make the Sacramento region hotter, drier, and increasingly prone to extremes like megadroughts, flooding, and large wildfires. These changing conditions are likely to affect water and energy availability, agricultural systems, plants and wildlife, public health, housing, and quality of life.

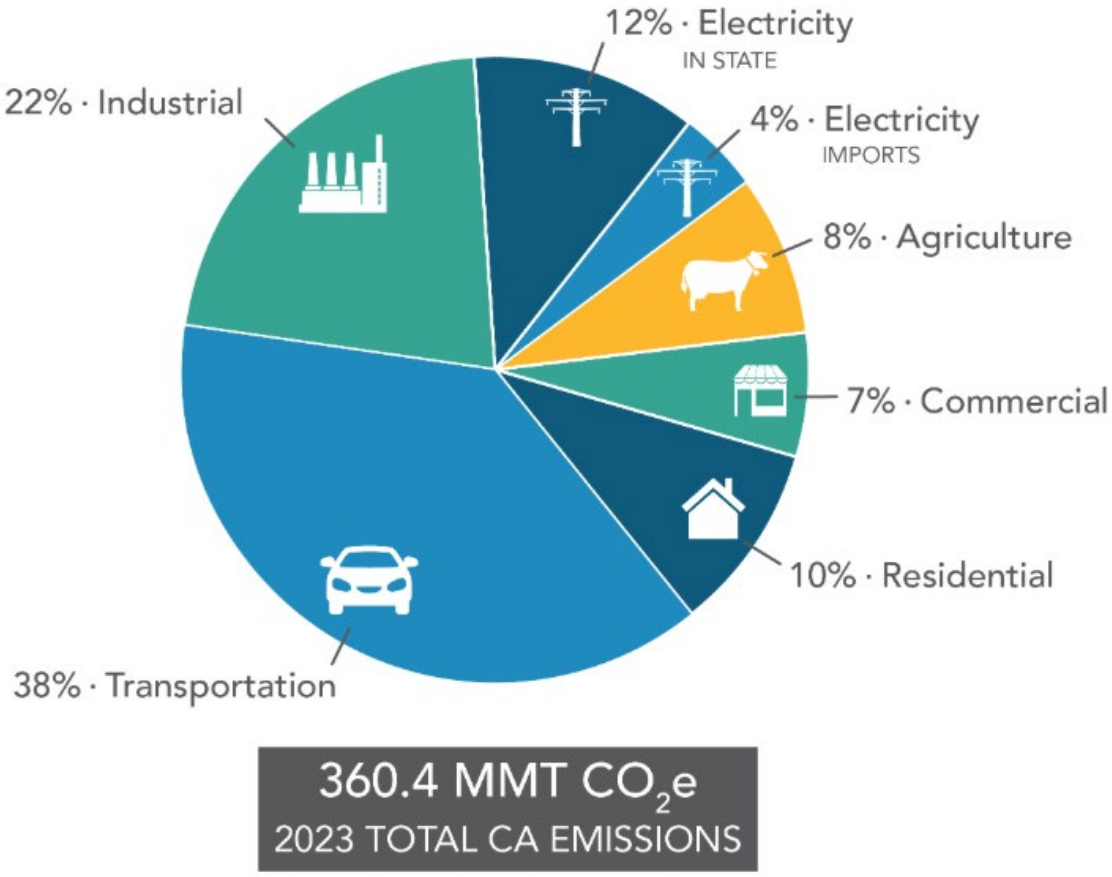
In Sacramento County, potential hazards (or exposures) related to climate change have also been analyzed as part of the Climate Change Vulnerability Assessment for the Sacramento County Climate Action Plan (CAP): Communitywide Greenhouse Gas Reduction and Climate Change Adaptation (Communitywide CAP) (Sacramento County, 2022). The direct, or primary, effects of climate change analyzed for Sacramento County include: increased temperature, changes in precipitation patterns, and sea level rise. Secondary consequences, which could occur as result of one or a combination of these primary effects, are also analyzed. These include: increased frequency, intensity, and duration of extreme heat days and heat waves/events; loss of snowpack and decreased water supplies; increased wildfire; and increased flooding.

STATE GREENHOUSE GAS EMISSIONS INVENTORY AND TRENDS

The California Air Resources Board (CARB) prepares an annual inventory of statewide GHG emissions. GHGs are typically analyzed by sector, a term that refers to the type of activity. As shown in Plate CC-1, 360.4 million MT CO_2e were generated in 2023.

Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2023, accounting for 38 percent of total GHG emissions. Transportation was followed by industry, which accounted for 22 percent, and then the electric power sector (including in-state and out-of-state sources), which accounted for 16 percent of total GHG emissions (Plate CC-1) (CARB, 2025).

Plate CC-1: California Emissions – 2023



California has implemented several programs and regulatory measures to reduce GHG emissions. Since the peak level in 2004, California's GHG emissions have generally followed a decreasing trend. In 2014, statewide GHG emissions dropped below the 2020 GHG Limit and have remained below the limit, even as population and gross domestic product have increased. GHG emissions per million dollars of gross domestic product have decreased by 56.6 percent since the peak in 2000 (CARB, 2025).

LOCAL GREENHOUSE GAS EMISSIONS INVENTORY

As described below, under “Sacramento County Climate Action Plan,” the County of Sacramento developed the the CAP to reduce GHG emissions and adapt to the effects of climate change. The CAP provides mechanisms to reduce GHG emissions associated with implementing the Sacramento County General Plan.

GHG emissions associated with mining and construction were included the 2021 inventory of GHG emissions for Sacramento County, and calculated from CARB’s OFFROAD2021 model for the entire County. Emissions were then scaled to the unincorporated County population.

Based on modeling conducted, mining and construction generation in 2021 resulted in emissions of approximately 35,913 $MTCO_2e$, less than one percent of total emissions. Mining emissions were estimated in two components: (1) electrical-related energy for conveyance from the source to the processing facility, and (2) off-road transportation emissions.

Table CC-1: 2021 Unincorporated Sacramento County Community GHG Inventory

Sectors	2021 (MT CO_2e / year)	Percent of Total (%)
Residential Building Energy	878,308	21.1
Commercial / Industrial Building Energy	555,596	13.4
On-Road Vehicles	1,844,206	44.3
Off-Road Vehicles	107,174	2.6
Solid Waste	156,744	3.8
Agriculture	266,470	6.4
High-Global Warming Potential Gases	317,796	7.6
Water & Wastewater	33,262	<1
Total:	**4,159,556**	**100**

Source: Sacramento County 2024

Off-road vehicles include, but are not limited to, recreational vehicles (watercraft, all-terrain vehicles, etc.), airline ground support vehicles, lawnmowers, and construction equipment. There are many potential categories, but the eight most impactful and County-relevant categories are included in the Inventory and listed in Table 9: Off- Road Fuel Consumption and Emissions by Equipment & Fuel Type, of the County 2021 GHG Inventory. Emissions from off- road agriculture vehicles are included in the agriculture section and thus omitted from this section. For the fuel types listed in Table CC-2, liquid fuels (gasoline and diesel) are shown in gallons and natural gas is in gallons gas equivalent (GGE).

Table CC-2: 2021 Off-Road Consumption and Emissions by Equipment & Fuel Type

Equipment Category	Gasoline (Gallons)	Diesel (Gallons)	Natural Gas (GGE)	2021 Emissions (MT CO_2e)	2015 Emissions (MT CO_2e)
Construction & Mining	119,537	3,385,448	0	35,913	96,063

REGULATORY SETTING

While most do not directly inform proposed project implementation or impact determinations, federal, state, regional, and local GHG-related plans, policies, and regulations are helpful for understanding the overall context for GHG emissions impacts and strategies to reduce GHG emissions.

FEDERAL

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the federal Clean Air Act (CAA). On April 2, 2007, the U.S. Supreme Court held that the EPA must consider regulation of motor vehicle GHG emissions. In Massachusetts v. Environmental Protection Agency et al., 12 states and cities (including California) along with several environmental organizations sued to require EPA to regulate GHGs as pollutants under the CAA (127 S. Ct. 1438 [2007]). The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant and that EPA had the authority to regulate GHGs.

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) "ENDANGERMENT" AND "CAUSE OR CONTRIBUTE" FINDINGS

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- Endangerment Finding*:* The current and projected concentrations of the six key GHGs—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations.

- Cause or Contribute Finding: The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

STATE

The legal framework for GHG emission reductions has come about through Executive Orders, legislation, and regulations. The major components of California's climate change initiatives are outlined below.

EXECUTIVE ORDER S-3-05

Executive Order S-3-05, issued in recognition of California's vulnerability to the effects of climate change, set forth the following target dates by which statewide GHG emissions would be progressively reduced: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

EXECUTIVE ORDER B-55-18

Executive Order B-55-18 established a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. The Executive Order states that this new goal is in addition to the existing statewide targets of reduction GHG emissions.

ASSEMBLY BILL (AB) 32 AND THE STATE CLIMATE CHANGE SCOPING PLAN

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 further details and puts into law the mid-term GHG reduction target established in Executive Order S-3-05: reduce GHG emissions below 1990 levels by 2020. AB 32 also identifies CARB as the State agency responsible for the design and implementation of emissions limits, regulations, and other measures to meet the target.

In December 2008, CARB adopted the Climate Change Scoping Plan (Scoping Plan), which contains the main strategies California will implement to achieve the required GHG reductions required by AB 32 (CARB, 2008). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of California's GHG inventory. CARB acknowledges that land use planning decisions will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors. The Scoping Plan details the regulations, alternative compliance mechanisms, voluntary actions and incentives, etc. proposed to meet the target emission reduction levels. The Scoping Plan was revised in 2013 and 2022. The most recent iteration, the 2022 Scoping Plan, lays out a path to achieve targets for carbon neutrality and reduce anthropogenic greenhouse gas emissions by 85 percent below 1990 levels no later than 2045, as directed by AB 1279 (CARB, 2022).

Executive Order B-30-15

In April 2015, Governor Edmund Gerald Brown, Jr. issued an executive order establishing a statewide GHG reduction goal of 40 percent below 1990 levels by 2030. The emission reduction target acts as an interim goal between the AB 32 goal (i.e., achieve 1990 emission levels by 2020) and Governor Brown's Executive Order S-3-05 goal of reducing statewide emissions 80 percent below 1990 levels by 2050. In addition, the executive order aligns California's 2030 GHG reduction goal with the European Union's reduction target (i.e., 40 percent below 1990 levels by 2030) that was adopted in October 2014.

Senate Bill (SB) 32

Approval of SB 32 in September 2016 extended the provisions of AB 32 from 2020 to 2030 with a new target of 40 percent below 1990 levels by 2030. The companion bill, AB 197, adds two non-voting members to the CARB, creates the Joint Legislative Committee on Climate Change Policies consisting of at least three Senators and three Assembly members, requires additional annual reporting of emissions, and requires Scoping Plan updates to include alternative compliance mechanisms for each statewide reduction measure, along with market-based compliance mechanisms and potential incentives.

SB 1493 – Vehicle Emissions of GHG

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars.

AB 341

The state legislature enacted AB 341 (California Public Resource Code Section 42649.2), increasing the diversion target to 75 percent statewide. AB 341 requires all businesses and public entities that generate 4 cubic yards or more of waste per week to have a recycling program in place. The final regulation was approved by the Office of Administrative Law on May 7, 2012, and went into effect on July 1, 2012.

MANDATORY REPORTING OF GHG EMISSIONS (17 CCR §95100 - §95158)

This rule applies to entities of certain sources categories, including suppliers of transportation fuels and generators of electricity. However, no specific reporting requirements apply to electric power generation from solar resources.

CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS

CCR Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for space or water heating) results in GHG emissions.

The Title 24 standards are updated approximately every three years to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2022 Title 24 standards became effective on January 1, 2023. The 2022 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. New for the 2022 Title 24 standards are non-residential on-site photovoltaic (solar panels) electricity generation requirements.

The standards are divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards—the energy budgets—that vary by climate zone (of which there are 16 in California) and building type; thus, the standards are tailored to local conditions. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that are basically a recipe or a checklist compliance approach

CALIFORNIA GREEN BUILDING STANDARDS

The California Green Building Standards Code (CALGreen; CCR Title 24, Part 11) is a code with mandatory requirements for all non-residential buildings (including industrial buildings) and residential buildings for which no other state agency has the authority to adopt green building standards. The 2022 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings became effective on January 1, 2023 (California Building Standards Commission).

The development of CALGreen is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

CALGreen contains requirements for storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural

resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency. CALGreen contains two levels of voluntary measures (Tier 1 and Tier 2) which go beyond minimum State code requirements. Categories of Tier 1 and Tier 2 measures include: EV designated parking; EV charging infrastructure; cool roofs; efficient outdoor lighting; dock door seals; potable water use reductions; recycled building material content; and resilient flooring.

Local

Sacramento County Climate Action Plan

The Sacramento County Board of Supervisors approved the Final Climate Action Plan (CAP) on November 6, 2024 (Sacramento County, 2024). The CAP is a comprehensive plan for reducing GHG emissions and adapting to the effects of climate change that identifies strategies and measures to meet the State's 2030 and 2045 GHG emissions reduction targets. The CAP is a multi-objective plan that balances environmental, economic, and community interests; provides mechanisms to reduce GHG emissions associated with implementing the Sacramento County General Plan of 2005–2030; and aligns with multiple County initiatives. The CAP establishes a long-term GHG emissions reduction target for 2045 that aligns with the AB 1279 target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. The 2030 GHG reduction target is also aligned with the 2022 Scoping Plan's accelerated target to reduce GHG emissions to 48 percent below 1990 levels by 2030.

Sacramento County General Plan

The Land Use Element of the Sacramento County General Plan contains the following applicable policy:

LU-115: It is the goal of the County to reduce greenhouse gas emissions to 1990 levels by the year 2020. This shall be achieved through a mix of State and local action.

Significance Criteria and Methodology

Significance Criteria

GHG emissions have the potential to adversely affect the environment because such emissions contribute cumulatively to global climate change. It is unlikely that a single project will contribute significantly to climate change, but cumulative emissions from many projects could affect global GHG concentrations and the global climate system. Therefore, impacts are analyzed within the cumulative context of the project's potential contribution to the significant impact of global climate change.

Based on Appendix G of the CEQA Guidelines, implementation of the proposed project would result in a cumulatively considerable contribution to the significant impact of climate change if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG.

Section 15064.4(b) of the CEQA Statute and Guidelines, concerning determining the significance impacts from GHG emissions, states that a lead agency may consider the following three factors in assessing the significance of impacts from GHG emissions.

- The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

As stated in Appendix G of the CEQA Guidelines, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations.

On April 23, 2020, the SMAQMD Board of Directors adopted the Update to the Recommended GHG Emissions Thresholds of Significance (Table CC-3), which established thresholds of significance for GHG emissions designed to analyze a project's compliance with applicable State laws, including AB 32 and SB 32 (SMAQMD, 2020). The Sacramento County Board of Supervisors adopted the same threshold in December 2020. The SMAQMD developed the thresholds for Sacramento County based on determining Sacramento County's share of statewide 2030 GHG emissions by sector, determining the share of Sacramento County 2030 emissions from existing development versus new development, allocating 2030 GHG emissions from new development among land uses and place types to set numeric thresholds, and setting best management practices by land use and place types that achieve those numeric thresholds. Specifically, the SMAQMD adopted a mass emissions based threshold for

the construction phase of all project types of 1,100 MT CO_2e per year (SMAQMD, 2021).

Table CC-3: SMAQMD Threshold of Significance for GHG

Land Development and Construction Projects		
	Construction Phase	*Operational Phase*
GHG as CO_2e	1,100 MT CO_2e / year	1,100 MT CO_2e / year
Stationary Source Only		
	Construction Phase	*Operational Phase*
GHG as CO_2e	1,100 MT CO_2e / year	10,000 MT CO_2e / year

For mining projects in the past, the threshold of significance for the commercial and industrial sector was determined using the Sacramento Area Council of Governments (SACOG) 2020 projection of building square footage for this sector. However, a significance threshold which utilizes building square footage is inappropriate given that mining operations are primarily exterior and can occur over large swaths of land. A mine is not similar to a land development or a construction project. A mine is not developing the land for future uses or constructing any structures; it merely extracts aggregate materials. Furthermore, most mine operations are not simultaneously excavating the entire site; instead, the site is mined in smaller phases. The operator may work one phase of a mining project for over a year. Therefore, instead of using the County's industrial and commercial threshold, or SMAQMD's threshold of 1,100 metric tons per year for a typical land development such as a residential development, this analysis utilizes SMAQMD's stationary sources operational phase threshold of 10,000 metric tons per year.

Issues Not Discussed Further

All issues identified in the significance criteria are evaluated below.

Methodology

Construction Impact Methodology

Project construction activity would include grading and paving activities for the site entrance and office areas, installation of a conveyor undercrossing, and installation of the overland conveyor system. These construction improvements were originally anticipated to occur in 2023, but now not likely to occur until 2026. Table CC-4 presents a summary of the anticipated Project construction schedule and duration. Tasks are listed in the anticipated sequence that they would occur.

Table CC-4: Anticipated Construction Schedule and Duration

Task	Year	Duration
1. Grading (entrance and office area)	2026	Approximately 2 weeks
2. Paving (entrance)	2026	Approximately 2 weeks
3. Install conveyor undercrossing	2026	Approximately 2 weeks
4. Paving (over conveyor undercrossing)	2026	Approximately 2 days
5. Install overland conveyor	2026	Approximately 2 weeks

For evaluation of construction emissions, the California Emissions Estimator Model ("CalEEMod") was used, version 2020.4.0. CalEEMod incorporates state and locally approved emission factors and methodologies for estimating both the daily maximum and annual average emissions levels for criteria pollutants and GHG emissions associated with land development projects, including mining. The following CalEEMod model selection parameters were used:

1. ***Project Location***: Location is set to the County level for Sacramento County. This sets windspeed and precipitation frequency assumptions for modeling. The Project site is located within the jurisdiction of the SMAQMD and part of the Sacramento Valley Air Basin ("Basin"). The Basin is currently designated as a nonattainment area for State and National ozone and particulate matter ambient air quality standards

2. ***Lot Acreage***: The Project construction activities would occur on ±10 acres of Aerojet property, comprising the site entrance and office areas.

3. ***Urbanization***: The land use setting for purposes of modeling is designated as urban given proximity to urban development and other approved development projects.

4. ***Climate Zone***: The site is within Climate Zone 6 based on the site's zip code.

5. ***Equipment***: The project applicant provided construction assumptions, such as construction task, equipment type, horsepower ratings, and work duration, for use in emissions modeling.

These construction equipment assumptions are included in Appendix A-1 of Appendix AQ-1, CalEEMod Modeling Assumptions, and Appendix A-2, Equipment Inputs – Construction. Equipment load factors were obtained from data provided by CARB.

6. ***On-Model Mitigations***: The "mitigated construction" results (as reported in the modeling outputs) assume that disturbed surfaces would be wetted at least two times per day for dust control. The project will employ a full-time water truck; therefore, this assumption is likely conservative. Mitigation also includes limiting vehicle speeds on unpaved roads to 15 miles per hour (mph). These mitigations are required to meet SMAQMD's Basic Construction Emission Control Practices

(Best Management Practices). No other on-model mitigations have been applied in CalEEMod. The “mitigated construction” results are presented in the emissions summary below.

Operational Impact Methodology

Project operational activity would include mining to reclamation contours and transport of mined materials by a combination of truck (for internal transport to conveyor) and conveyor. The emissions evaluation for mining operations also includes electricity consumption and particulate matter emissions associated with the use of overland conveyors.

For evaluation of operational emissions, the analysis relied upon CalEEMod for mining related emissions and EPA AP-42 emission factors for conveyor related particulate matter emissions.

Mining related operational emissions are modeled using the CalEEMod Construction modules, which address conventional site grading and earthmoving activities typical of sand and gravel mining. Project emissions are modeled using the project’s equipment intensive mining method (i.e., mining with two excavators that load six haul trucks that feed an overland conveyor, supported by a motor grader, bulldozer, and water truck). The project may also use an alternative method of mining involving two front-end loaders directly feeding an overland conveyor, supported by a motor grader, bulldozer and water truck. Modeling this scenario is not necessary as it is less likely to occur, significantly less equipment intensive and would generate substantially less emissions than the modeled CEQA worst case scenario. The CalEEMod model run accounts for the operation of excavation equipment, offroad haul trucks (to feed a conveyor) and water truck (for dust control). The particulate matter emissions associated with truck and conveyor transport, and GHG emissions associated with conveyor transport, are modeled separately outside of CalEEMod. Details for off-model emissions calculations are included in Appendix B of the Air Quality/GHG report (Appendix AQ-1) The following CalEEMod model selection parameters were used for the evaluation of mining related emissions:

1. ***Project Location, Urbanization, and Climate Zone***: Same as for the project construction model as described above.

2. ***Lot Acreage***: The project would involve mining on ± 2,125 acres of Aerojet property. For mining (grading) activity, this model input parameter has a negligible impact on modeled emissions outputs because the model uses more refined acreage assumptions for graded areas as applicable to each construction phase

3. ***Production***: The emissions analyses are based on the maximum anticipated production proposed for the project, which would involve mining and transport of up to 3,000,000 tons per year of sand and gravel

4. ***Equipment***: The project applicant provided operational equipment assumptions, such as equipment type, horsepower ratings, and work duration, for use in emissions modeling. These operational equipment assumptions are included in Appendix B-1, Equipment Inputs - Mining Operations and Plant Support (within report Appendix AQ-1). Equipment load factors were obtained from data provided by the California Air Resources Board

5. ***Energy Use***: Operational energy use was modeled separately outside of CalEEMod.

6. ***On-Model Mitigations***: The "mitigated construction" results (as reported in the modeling outputs) assume that disturbed surfaces would be wetted at least two times per day for dust control. The Applicant plans to employ a full-time water truck; therefore, this assumption is likely conservative. Mitigation also includes limiting vehicle speeds on unpaved roads to 15 mph. These mitigations are required to meet SMAQMD's Basic Construction Emission Control Practices (Best Management Practices). No other on-model mitigations have been applied in CalEEMod. The "mitigated construction" results are presented in the emissions summary below

7. ***Trips and VMT***: Emissions and vehicle miles traveled (VMT) associated with on-road (off-site) worker trips are accounted for in the model.

The Project mining emissions are modeled for the first five years of the proposed 20-year mine life to evaluate the maximum annual emissions since the emission factors and resulting emissions would improve over time. Project emissions are modeled using the CalEEMod construction emissions modules (rather than operational emissions modules), because they are setup to better address conventional site grading and earthmoving activities typical of sand and gravel mining. However, Project emissions are still evaluated against applicable operational thresholds established by the SMAQMD. The "operational year" in the CalEEMod model is set to 2028 (one model year after the final year of the construction module, 2027) to ensure proper model functionality. These selections have no effect on the results or significance conclusions.

Using the outputs of the CalEEMod model runs the highest pollutant-generating years for each pollutant are selected for reporting of emissions and comparison of the Project's emissions to SMAQMD's thresholds of significance. For daily results, modeled emissions are reported as the higher of the winter or summer daily results summary.

Impacts And Analysis

Impact CC-1: Generate GHG Emissions, Either Directly or Indirectly, That May Have A Significant Impact on the Environment

GHG EMISSIONS EVALUATION - CONSTRUCTION

Project construction activity would include grading and paving activities for the site entrance and office areas, installation of a conveyor undercrossing, and installation of the overland conveyor system. These activities all have the potential to generate GHG emissions. Table CC-5 presents the Project's construction-related GHG emissions analysis in comparison to SMAQMD thresholds based on the use of Basic Construction Emissions Control Practices as required to allow the use of the SMAQMD thresholds.

The modeling results indicate that Project's construction-related GHG emissions are well below the SMAQMD's 1,100 MT/year of carbon dioxide equivalent ("CO_2e") threshold of significance for CEQA. Therefore, the Project's GHG emissions impacts associated with construction activity are ***less-than-significant***.

Table CC-5: Construction Related GHG Emissions Analysis (MT CO2e / Year)

Year	CO_2e
2026	76.0
SMAQMD Threshold	1,100
Exceeds Threshold (Yes / No)?	No

Notes:

1. *SMAQMD thresholds from Table CC-3, above.*
2. *MT = Metric tons; CO2e = carbon dioxide equivalent.*

GHG EMISSIONS EVALUATION – OPERATIONS

Project operational activity would include mining to reclamation contours and transport of mined materials by truck internally, and conveyor to the separately permitted off-site processing plant. These activities all have the potential to generate GHG emissions. Table CC-6 presents the Project's operational-related GHG emissions analysis in comparison to SMAQMD thresholds. The modeling results indicate that Project's operational-related GHG emissions are well below the SMAQMD's stationary source threshold of 10,000 MT/year of CO_2e. Therefore, the Project's GHG impacts associated with operational activity are ***less-than-significant***.

Table CC-6: Operational Related GHG Emissions Analysis (MT CO2e / Year)

Emissions Category	CO_2e
Mining Operations	2,168.8
SMAQMD Threshold	10,000
Exceeds Threshold (Yes / No)?	No

Notes:

1. *SMAQMD thresholds from Table CC-3, above.*
2. *MT = Metric Tons; CO2e = carbon dioxide equivalent*

Impact CC-2: Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of GHG

Construction and operational emissions of greenhouse gases were found to be less than significant. Therefore, the project would not conflict with the County's Climate Action Plan and associated policies and regulations adopted for the purpose of reducing the emissions of greenhouse gases. Impacts from implementation of the project would be ***less than significant.***

Mitigation Measures

No mitigation measures recommended.

7 CULTURAL RESOURCES

INTRODUCTION

This chapter addresses the potential cultural resources impacts associated with the proposed White Rock North Mine project (proposed project). The analysis in this chapter differentiates historical and archaeological resources from Tribal Cultural Resources (TCRs) that are considered significant by local indigenous tribes. TCRs are separate and distinct from archaeological cultural resources, and are discussed in Chapter 13, Tribal Cultural Resources.

ENVIRONMENTAL SETTING

The 2,136-acre project site, including a conveyor extension, is characterized by extensive areas of dredge tailings, the results of historic dredging activities from 1905 through 1962. Some tailings throughout the project site remain relatively undisturbed since the discontinuation of historic mining activities, although by 1964 a portion of the dredge tailings were altered by Aerojet facilities and roads were altered and built into the tailings. The basic purpose of the project is to harvest sand and gravel from remaining potentially historic features, leaving relatively flat pads that support future use of the property under the Aerojet SPA.

Two historic resources with potential cultural/historical significance have been recorded inside the project area: CA-SAC-308H (Folsom Mining District); CA-SAC-1013H (Natomas-Aerojet Dredge Fields/NADF). Numerous historic features related to CA-SAC-1013H have been observed during field survey. None of these resources have been determined to be eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR).

CA-SAC-308H FOLSOM MINING DISTRICT, AMERICAN RIVER PLACER MINING DISTRICT

The Folsom Mining District and the American River Placer Mining District are elements of one recorded site that spans the entire region, CA-SAC-308H. The site began with a small Chinese mining site in Folsom but grew through accretion to a site measuring as much as 70 square miles (ECORP, 2025).

CA-SAC-1013H/P-34-1710 NATOMAS AEROJET DREDGE FIELDS (NADF)

The NADF is comprised of tailings which cover approximately 5,100 acres of the Aerojet property. Bucket-line dredging of this, and adjoining areas, was done by Natomas Company. Ten Natomas dredges operated on what is now Aerojet land (Coleman, 2010).

CULTURAL CONTEXT

NATIVE AMERICAN PERIOD (>10,000-481 BP)

The archaeological record of Sacramento Valley is complicated by a variety of factors, some caused by geomorphic processes and others resulting from the high degree of cultural diversity that characterized much of northern California deep into the past (Hildebrandt and McGuire, 2022). As a result, historians and archaeologists rely heavily on linguistic grouping to delineate the vast riverine landscape of pre-contact California.

The general project area lies within the traditional territory of the Nisenan, or Southern Maidu, a Penutian speaking central California group (Kroeber, 1925). The Nisenan territory held the plains, foothills and mountainous portions of the drainages of the Feather River. The Sacramento Valley formed the western border and the Sierran Crest the eastern limit

PALEOINDIAN PERIOD (>10,000-8,000 BP)

The earliest evidence of human occupation in north-central California comes from isolated Clovis points found in just a few locations adjacent to the Sacramento Valley (Moratto 1984). The archaeological record indicates that resource intensification increased from at least 10,000 and 8,000 BP favoring trophy hunting and large game tracking, characterized by archaeological sites containing numerous fluted projectile points and butchered large animal bones (Andrushko, et. al., 2005). Large game strategies were determined through tool assemblages and butchery evidence. Bones of extinct species have been found, but evidence of butchery has yet to be identified in California (Wallace, 1955).

LOWER ARCHAIC PERIOD (8,000-5,500 BP)

Geologic evidence suggests that around 8,500 BP, a warmer climate dried the Great Basin and lasted for several thousand years (Rosenthal et. al. 2007). The archaeological record also reflects this in the change of artifacts dated to this period. Narrower projectile points for smaller game, portable milling tools (e.g. manos and metates) for processing foraged materials such as nuts, seeds, and other vegetable matter are often the evidence used to argue that the Lower Archaic Period represents a period of seasonal resource exploitation and temporary encampment rather than the regional sedentism that occurs later in the Sacramento Valley (Bettinger et. al., 2005).

MIDDLE ARCHAIC PERIOD (5,500-2,500 BP)

Methods to remove tannins from acorns appear in the Middle Archaic Period (Lindstrom, 1989). Varying grinding artifacts such as mortars and pestles were added to metates and manos for grinding seeds and other vegetable material as foraging became a more centric dietary staple. Flaked stone tools became more refined and specialized, and bone tools were more common (Moratto, 1984). In Sacramento Valley, the earliest recorded atlatls date to the Middle Archaic Period and are theorized to be an imported good (Rosenthal et. al., 2007). As such, it is thought that ranged foraging also brought more cultural interaction and trade between California tribes (Hildebrandt and McGuire, 2022).

UPPER ARCHAIC PERIOD (2,500-1,000 BP)

California likely experienced a population intensification in the Upper Archaic Period (Erlandson 1994). New immigrants who spoke a language of the Uto-Aztecan linguistic stock seem to have displaced or absorbed earlier populations of Hokan-speaking peoples who lived in Central California. Settlements seem to have become more concentrated, with central villages in a well-defined territory system, most of which spoke their own language or dialect (Kroeber, 1925; Moratto, 1984).

The Sacramento Valley bears evidence of cultural stratification from this period. Formalized cemetery areas—additional evidence of established moieties[1]—often included the materials owned by the individual and varied greatly in quality and quantity such as side notched, stemmed projectile points (for bow hunting), hand-stones, milling slabs, and beads (Moratto 1984).

LATE PERIOD (POST 1,000 BP)

Large riverine villages represent the Late Period as one of more sedentary living. This is evidenced by a decrease in portable manos and metates in tandem with the establishment of large, multi-generational bedrock mortar sites (Rosenthal et. al., 2007). In Sacramento Valley, this tradition is classified as the “Windmiller Pattern” and is supported not only by archaeological evidence, but also robustly evidenced through ethnographic accounts (See Chapter 11: Tribal Cultural Resources).

SPANISH MISSIONARY PERIOD (1542-1822 A.D.)

In 1542, Juan Rodriguez Cabrillo became the first Spanish maritime explorer to visit California. The Viceroy of New Spain (Mexico) sent Cabrillo north to look for the Northwest Passage. Cabrillo visited San Diego Bay, Catalina Island, San Pedro Bay, and the northern Channel Islands. The English adventurer Francis Drake visited the Miwok Native American group at Drake’s Bay or Bodega Bay in 1579 (Castillo, 1978).

The colonization of California began with the Spanish Portolá land expedition. The expedition, led by Captain Gaspar de Portolá of the Spanish army and Father Junipero Serra, a Franciscan missionary, explored the California coast from San Diego to the Monterey Bay in 1769. The purpose of the missions, presidios, and pueblos was to establish Spanish economic, military, political, and religious control over the Alta California territory (Cook, 1958).

While the Spanish had made forays into the Central Valley since the mid eighteenth century, the earliest non-indigenous presence in the region occurred in 1808 when Capitan Gabriel Moraga led an expedition from Mission San Jose to the northern Sacramento Valley (Cook, 1958). Early contact with the first Spanish explorers to enter California was limited to the peripheries of Nisenan territory; they occurred mainly to the south on lands of the Miwok which had been explored by José Canizares in 1776, with

[1] Moiety refers to one of two distinct, complementary kinship groups into which a society is divided (Encyclopedia Britannica, Inc., 2025)

only ephemeral explorations into Nisenan lands. There are no records of Nisenan groups being removed to the missions. However, they received escapees from the missions, as well as the pressure of displaced Miwok populations on their southern borders. The first known occupation by European Americans was marked by American and Hudson Bay Company fur trappers in the late 1820s establishing camps in Nisenan territories (Wilson and Towne, 1978).

Mexican Republic Period (1822-1848 A.D.)

Mexico won its independence from Spain and claimed all lands south of the 42nd parallel between the Pacific Coast and today's eastern boundary of Texas as territory of the Mexican Republic.

In 1827, American trapper Jedediah Smith traveled along the Sacramento River and into the San Joaquin Valley to meet other trappers of his company, but American trappers established no permanent settlements (Thompson and West, 1880).

A deadly epidemic (possibly malaria) swept through the Sacramento Valley in 1833, and it had a devastating effect on Nisenan populations. Entire villages were lost and surviving Nisenan retreated into the hills. An estimated 75 percent of their population was wiped out, and only a handful were left to face the gold miners and settlers who were soon to follow (Cook, 1955).

John Sutter, a European immigrant, built a fort at the confluence of the Sacramento and American rivers in 1839. In 1841, the Mexican governor of Alta California awarded Sutter a land grant called New Helvetia. Sutter built a flour mill and grew wheat near the fort Gold was discovered in the flume of Sutter's lumber mill at Coloma on the South Fork of the American River in January 1848 The discovery of gold initiated the 1849 California Gold Rush, which brought thousands of miners and settlers to the Sierra Nevada foothills east and southeast of Sacramento (Stapp, 2013).

American Period (1848 A.D. -)

The American Period began in 1848 with the conclusion of the Mexican American War and the signing of the Treaty of Guadalupe Hidalgo. As a result, Alta California became ceded to the United States. In 1850, as thousands of gold seekers arrived to participate in the California Gold Rush, California became the 31st state. In the following decades, U.S. courts confirmed many Mexican land grants. Land located outside land grants became federal public land and surveyed into sections, quarter-sections, and quarter-quarter sections under the Public Land Survey System. At general land offices, patentees purchased public lands at low fixed prices or, after 1862, applied for homestead patents (Robinson, 1948).

Project Site History

Indigenous lifeways in the vicinity of the project site were drastically impacted by the gold rush. A Nisenan village near the present site of the Cameron Park subdivision was burned in 1861, their leaders killed, and its 450 inhabitants were runoff by miners (Payen, 1961). Some Native Americans turned to gold mining to supplement traditional

subsistence strategies and Native American gold miners operated in the Folsom vicinity. Bill Franklin, a 75-year-old Nisenan Miwok Indian spoke to Susan Lindstrom during her investigation of the NADF in 1988 and recalled working in the gold dredge operations near Prairie City and the project site (Franklin p.c. with Lindstrom, 1/22/1988):

> "…As a child, he also reworked gravels along the banks of the American River. He recalls pulling out clumps of Bermuda grass along the river's edge and shaking the trapped gold out into sluice boxes. In the 1930's he mined the area with shovel and sluice box. During the depression he picked olives on the reclaimed lands on the Aerojet property" (Lindstrom, 1989).

Prairie City

Prairie City (California Historic Landmark #464) is the nearest historic landmark in vicinity of the Project site (OHP 2018) and served as the nearest business and commercial center for many mining camps in the area. At its peak in about 1854, over 1,000 residents were thought to inhabit the city, many of whom were homesteaders whose businesses supported the mining industry as it grew (Lindstrom 1989).

Placer Mining

The mining region in proximity to Folsom was originally part of the Leidesdorf Land Grant. The Folsom Area was originally settled in 1849 by black miners. The region around Folsom was subject to extensive placer mining during the gold rush. Mining at Prairie City commenced in 1853. An historic marker at the junction of Prairie City Road and Hwy 50 marks the spot. The narrative on the marker erroneously states the location of an early quartz mill in Prairie City. Two early quartz mills (which operated in 1855 and 1857 were) located at Rhodes' Diggings, one mile to the east of Aerojet (Lindstrom, 1989).

Natomas Water and Mining Company (NWMCo), a predecessor to Natomas Company, was organized in 1851 to provide water for mining interests. The company owned large amounts of land and controlled economic activities in the project vicinity. NWMCo constructed a main canal in 1851 extending for about 20 miles along the south fork of the American River to Prairie City (Thompson and West, 1880). While the NWMCo initially served and engaged in mining interests, it later diversified to promote such varied pursuits as agriculture, hydroelectric power, aggregate processing, and real estate. Through a series of land purchases and mergers the NWMCo was reincarnated as the Natomas Consolidated of California (Later known as Natomas Company) which had become the principal operator in the Folsom Mining District (Lindstrom, 1989).

The Sawyer Decision in 1884 effectively suspended hydraulic mining operations discharging sediments into streams tributary to the Sacramento and San Joaquin rivers, unless there was proper debris control. The date of the Sawyer Decision provides a convenient benchmark with which to date hydraulic mine sites in the area. As such, hydraulic mining within the project area could have occurred from the 1850s to 1884. (CJM&G, 1955:143).

Near the turn of the century, the company began to dredge its landholdings." Bucket Line" dredging began at Folsom in 1899 and soon became a major industry. The Natomas Company was responsible for the dredge tailings which are most prevalent today. The area along White Rock Road was initially prospected for its potential value as a gold dredge site by the Folsom Development Company which operated between 1903 and 1908 by Gugenheim and Short (Lindstrom, 1989).

Ney School

On August 19, 1884, the Sacramento County Board of Supervisors voted to form the Ney School District (often misspelled *Nye* in records) from parts of Kinney, Prairie City, and Elder Creek Districts (Folsom Telegraph, 1945; Sacramento Bee, 1884; Sacramento Union, 1884). Land for the new school was donated by George Ney, who also provided additional funds for building the school along with nine other landowners in the area. The one-room schoolhouse was dedicated on November 18, 1884 (Folsom Telegraph 1944). In its first year, Ney School received 26 students, taught by May L. Pelton (Folsom Telegraph, 1945).

Hundreds of students passed through the doors of Ney School during its nearly 60 years in service, and the school's last full term was 1943–1944. In August 1945, the Sacramento County Board of Supervisors declared the Ney School lapsed (Folsom Telegraph, 1945). At the time of its closure, Ney School was believed to be the oldest rural school building in Sacramento County (Folsom Telegraph, 1946).

However, it wasn't long before the old schoolhouse received a new life. In 1948, the Folsom Lyons Club paid to move the building to the Folsom High School property (present-day Sutter Middle School) and remodel the building into the Folsom Scout Lodge (Folsom Telegraph 1949, 1952). The Scout Lodge became a center of activity for scouting and community events throughout the 1950s and 1960s. In 1950, the Folsom Unified School District, which now controlled the original school property on White Rock Road, announced an auction for the property (Folsom Telegraph, 1950). Based on a review of aerial photographs, it appears that the Ney School building was placed in the southern portion of campus, near present day intersection of East Bidwell and Coloma streets. The school building appears to have been partially demolished between 1964 and 1966 when East Bidwell Street was rerouted to its current alignment, and there is no evidence of the structure by 1971.

Mining History

A summary of placer mining techniques conducted within the project area is provided, as an accurate interpretation and assessment of mining sites is facilitated by an understanding of the mechanics of gold recovery. This discussion is directly taken from technological summaries provided in a "Cultural Resources Evaluation of Aerojet General Corporation, Sacramento Plant, Sacramento County" (1989), prepared by Susan Lindstrom.

WATER CONVEYANCE SYSTEMS

Placer mining is dependent on a regular water supply capable of delivering a considerable volume of water. Simple shallow placering techniques required some amount of water to process gravel by pan or rocker. With the development of hydraulic mining in the mid-1850s, vast amounts of pressurized water were required to wash down whole mountainsides.

By the 1850s these water supply needs necessitated the formation of large mining and water supply companies (such as the NWMCo) to develop and manage the elaborate supply network necessary to make mining cost effective. A ditch of suitable dimensions was hand dug using picks and shovels. Later ditches were excavated by horses and scraper, blasting powder, and more recently by mechanical tools. Water was taken from the most available source at command and conveyed to points where required for use. Progress was slow and at first ditches were generally less than a mile.

On occasion, hydraulic pipes were placed in shallow ditches to allow for the transport of a higher velocity of water (hydraulic mining operations) to circumvent old canals or as a means of preventing blowouts at weak points along the bank. Segments of rusted 12 inch and 14-inch diameter riveted pipe observed within the Project site (P-34-1729, P-34-1732, P-34-1935) may represent historic water conveyance activities. By the 1870s, pipes largely replaced wooden flumes, as the latter were costly and only lasted between eight to ten years (Lindstrom, 1989).

SHALLOW PLACER MINING

Shallow placering involves the removal and processing of loose surface soil and gold bearing sand with devices involving the basic principle of agitating gold-bearing gravel in water filled containers. These workings could have been processed by either pan, rockers, long tom, and/or sluice box. In the western placer regions, the “cream” was quickly skimmed from shallow bars and benches along the streams by the initial rush of miners using pans, rockers, “long toms” and sluice boxes.

PANNING

Shallow placering involves the removal and processing of loose surface soils and gold-bearing sand. Panning, usually with a metal pan, was the original and simplest method of washing hand workings (Lindstrom, 1989).

ROCKER OR MINER’S CRADLE

The pan was rapidly replaced with more efficient, higher volume devices such as the wooden rocker or miner’s cradle. It takes its name from a likeness to the 19th century rocking baby cradle. It ranges in size from 24’ to 60’ long, 12 to 24’ wide and 6’ to 24’ high. Deposits are washed through the rocker, with larger gravels being caught on a screen or punched iron sheet and smaller material falling through to the bottom. Here, heavy gold particles are trapped in the rough surface created in the bottom of the rocker. They are removed after the debris is worked out at the low end of the rocker (Lindstrom 1989).

LONG TOM

The Long Tom is an inclined trough about 12 feet long. This technique marks the first attempt to divert streams from their channels. The upper section is a sluice with screen or perforated metal sheets which eliminate larger material. The smaller material is washed through the sluice down into the lower section, or riffle box which contains riffles (or stops) behind which the heavy gold is trapped. Lighter sediments are washed out at the bottom end (Lindstrom, 1989).

SLUICE

Sluice boxes are an elaboration of the Long Tom. In its simplest form it is no more than an elongated rectangular trough fitted with transverse cleats, or riffles, on its bottom. It is operated by allowing a stream of water to carry the sand and gravel over the riffles which in turn detain any gold or heavy minerals as they settle to the bottom (Lindstrom, 1989).

GROUND SLUICING

Initially, low-pressure water was used to break down terrace margins by the action of the water flowing over them. The abrading forces of water and gravity were aided using shovel and pick. Sediments are fed into the ground sluice and are washed. Cobbles removed from the ground sluice trench are vertically stacked along the edge upon ground that has already been worked. A low cobble wall (or dry wall) forms, which serves both as a retaining wall (impounding other cobbles which are tossed behind it) and as a water diverting device (directing flowing water to the base of the cut bank to facilitate erosion). Accumulated gold is collected from the rock layers or block riffles in the bottom of the sluices by removing the rocks and washing the now concentrated earth with a rocker, long tom or short sluice (Lindstrom, 1989). The distinctive herringbone patterns that mark the drainage systems of ground sluices are present throughout the Project site.

LOW-PRESSURE HYDRAULICKING

A technique developed in the mid-1850s which uses a stream of water directed under pressure against a bank. Water was conveyed to a working face by a pipeline or hose and was forcefully directed against that face through a moveable nozzle. The loosened debris was washed into a waiting system of sluices from which the gold was recovered. Hydraulic cut banks are generally steeper than ground sluicing embankments as the water is directed under pressure, upslope onto the working face (Lindstrom, 1989).

DREDGING

At least 60 percent of Aerojet lands are covered by dredge tailings. The collective tailings along the American River are a 60-year accumulation which covers about 28 square miles. Folsom Mining District is one of the largest dredge field districts in California and ranks 4th among California gold districts in amount of gold produced. Between the years of 1890-1962, Natomas Company and other dredging operations mined approximately one billion cubic yards of gravel throughout this district (Lindstrom, 1989).

DRAGLINE DREDGING

Also known as “doodlebug”, dragline dredging excavates with a single bucket much like a steam shovel. They are designed to work gravels in which the gold content of the deposit would not amortize the capital investment of a bucket line dredge. Dragline dredging was performed by General Dredging Company along Alder Creek after 1946. Additional dragline dredging was done in the 1930s along White Rock Road near Aerojet’s Gate 7 (Lindstrom, 1989).

DRY LAND DREDGING

Unlike bucket lines which float in their own pond of water, dry land dredging is stationed on land. Most were used on small tracts of shallow gravel. Typically, they consisted of a wheel or skid-mounted screening and washing plant fed by a power shovel equipped with a dragline boom and bucket. Gold was recovered by use of Ainlay bowls or short sluices. Most were equipped with stackers for disposal of the washed cobbles. One such plant operated on Aerojet land adjacent to Alder Creek and .25 miles east of Prairie City Road (Lindstrom, 1989).

NATOMAS-AEROJET DREDGE FIELD (NADF)

The Aerojet property was the scene of extensive historic shallow placering, drifting, hydraulicking, ground sluicing, and dredging activities. Rebel Hill is a ridge which courses along the south side of Alder Creek (Lindstrom, 1989). The tailings located within the proposed Project site bordered by Aerojet Road to the north, Prairie City to the east, and White Rock Road to the south are the direct evidence of these activities vis a vis the presence of tailings, shafts, adits, cut banks, prospect pits, water management systems, and associated artifacts.

Initially during the early 1850s, surficial deposits measuring less than three feet deep were placer mined through a series of hand-dug excavations. The surface gravel was washed by pan or by higher-volume handwashing methods such as rockers, long toms and/or sluice boxes (ECORP, 2025).

An elaborate system of conveying water to the area and irrigating multiple excavation sites was developed in preparation for intensive gold recovery. A main ditch, constructed in 1853-54 by the Natoma Water and Mining Company, provided the large amount of water needed to operate these diggings. By 1860, water was supplied by the Alder Creek Ditch, Kelly’s Ditch, and an unnamed reservoir which was fed by Buffalo Creek Ditch (Lindstrom, 1989).

Drift mining and low-pressure hydraulicking were performed in the project site from the early 1850s until the Sawyer Decision in 1884. As cemented gravels cap some of the area, shafts were sunk beneath this hard surface layer into the “softer” gravels below. The gold-bearing leads were followed out with drift mining techniques (Lindstrom 1989). Ground sluicing likely occurred from the 1850s to 1912, though evidence would be destroyed by the bucket-line dredge tailings that dominate the landscape.

The windrows of tailings which cover the project site primarily represent the extensive bucket-line dredging conducted by the General Dredging Company during the 1940s. Mechanical tailings from dry land dredges were produced by smaller operators during the 1930s. Reclamation dredging by Natomas Company was performed in the western one-third of the Aerojet property. Natomas Number 4, one of two reclaiming dredges built by Natomas Company, was commissioned at Nimbus (near Aerojet Gate 1) in 1916 and worked on lands contained within the western one-third of Aerojet property. Subsequent to dredging activities, a “land leveler” (the precursor to the modern-day front-loader) was used to further even the ground surface. The Natomas Company bucket line dredges number 5, 8, and 9 operated southwards from Rebel Hill until 1921. Natomas Number 8 operated from 1911 until 1936. Natomas Number 5 worked further east between 1905 and 1936. Water for dredging activities may have been supplied by the Tarpan Reservoir. At its peak, Natomas Company operated ten dredges within the Project site. Artifacts and features associated with dredging activities include wire rope fragments, segments of riveted pipe, mine prospect pits, ditch systems, and water impounding features comprised of earthen dams and muddy water settling ponds (ECORP, 2025).

Rock crushing and the production of sand and gravel for the construction industry is one of the most important uses of dredge tailings. In 1916, the tailings disposal facilities on two dredges (Natomas 1 and 4), were remodeled to permit dumping cobbles near the stern of the dredge and depositing the finer rock and sand over the coarse rock. The surface gravel was washed by pan or higher volume methods. As a result, the Project site is pock-marked with countless mound tailings features. Each one represents a separate sluice clean out pile, where one or two individuals discarded cobbles too large for their sluicing apparatus and next dumped fine non-gold bearing sediments which were washed through their sluice boxes. Alder Creek provided a constant supply, and gravels may have been wheel barreled down to the creek to be washed (Lindstrom, 1989).

MANUFACTURING AND ROCKET TESTING ACTIVITIES

Aerojet was an aerospace defense contractor founded in 1942 by Dr. Theodore von Karman, an aerodynamicist. The company’s first product was Jet-Assisted Tack-Off rockets (JATOs) which boosted aircraft off short runways and carrier decks during WWII. Aerojet was one of the only companies in the world that produced and tested both liquid propellant engines and solid propellant motors. In the 1960s, Aerojet’s Sacramento Plant built large liquid rocket and solid propulsion systems for many national space and defense programs, Polaris, Titan, Minuteman, and Apollo. Aerojet was a major contributor to the research that designed the Strategic Defense Initiative (SDI) (ECORP, 2025).

The heart of the SDI program was a plan to develop a space-based missile defense program that could protect the country from a large-scale nuclear attack. The proposal involved many layers of technology that would enable the United States to identify and destroy automatically many incoming ballistic missiles as they were launched, as they flew, and as they approached their targets. The idea was dependent on futuristic technology, including space-based laser systems that had not yet been developed. As

such, the Aerojet testing and manufacturing campus may offer a significant contribution to Cold War historical documentation.

Regulatory Setting

Federal

Archaeological Resources Protection Act

The Archaeological Resources Protection Act establishes a clear, national legal policy that all types of archaeological, paleontological, and cultural resource site locations must be kept confidential to preserve them. (16 U.S.C. § 470hh.) The California Public Records Act recognizes the confidentiality principles of federal law. (Gov. Code, § 6254(k).)

Section 106 of the National Historic Preservation Act, 1966

Federal regulations for cultural resources are governed primarily by Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended). Section 106 of the NHPA requires Federal agencies to consider the effects of their undertakings on historic properties and affords the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. The ACHP's implementing regulations are the "Protection of Historic Properties" 36 Code of Federal Regulations (CFR) Part 800. The Federal agency first must determine whether it has an undertaking that is a type of activity that could affect historic properties. Historic properties are those that meet the criteria for or are listed in the NRHP.

National Register of Historic Places

"Historic properties," as defined by the ACHP, include any "prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the NRHP maintained by the Secretary of the Interior" (CFR Section 800.16(l)). Eligibility for inclusion in the NRHP is determined by applying the following criteria, developed by the National Park Service in accordance with the NHPA:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. That are associated with the lives of persons significant in our past; or
>
> C. That embodies the distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high

artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That has yielded, or may be likely to yield, information important in prehistory or history.

Integrity is defined in NRHP guidance as “the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity” (National Parks Service 2009). NRHP guidance further asserts that properties must have been completed at least 45 years before evaluation to be considered for eligibility. Properties with construction completed fewer than 50 years before evaluation must be proven to be “exceptionally important” (criteria consideration G) to be considered for listing.

State

California Environmental Quality Act (CEQA) and the California Register of Historic Resources

Under CEQA, lead agencies must consider the effects of their projects on historical resources. The California Environmental Quality Act (CEQA) defines a “historical resource” as a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR), a resource included in a local register of historical resources, and any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (Section 15064.5[a] of the Guidelines). Sacramento County does not currently have a local register. Public Resources Code (PRC) Section 5024.1 requires that any properties that can be expected to be directly or indirectly affected by a proposed project be evaluated for CRHR eligibility. According to PRC Section 5024.1(c) (1–4), a resource may be considered historically significant if it retains integrity and meets at least one of the following criteria. A property may be listed in the CRHR if the resource.

1. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;

2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of type, period, region or method of installation, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

To be considered eligible, a resource must meet one of the above-mentioned criteria and retain integrity. Integrity has been defined by the National Park Service as consisting of seven elements: location, design, setting, materials, workmanship, feeling, and association.

Impacts to historical resources that materially impair those characteristics that convey their historical significance and justify their inclusion or eligibility for the NRHP or CRHR are considered a significant effect on the environment (CEQA Guidelines 15064.5).

In addition to historically significant resources, which can include archaeological resources that meet the criteria listed above, an archeological site may meet the definition of a “unique archeological resource” as defined in PRC Section 21083.2(g):

> An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
>
> (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
>
> (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Public Resources Code Section 21083.2 (a), (b) and (c)). State CEQA Guidelines Section 15064.5, subdivision (e), requires that excavation activities be stopped whenever human remains are uncovered, and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the Native American Heritage Commission (NAHC) must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as timely identified by the NAHC. Section 15064.5 directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

Public Resources Code, Section 5097.5

Public Resources Code Section 5097 specifies the procedures to follow in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the NAHC. Public Resources Code Section 5097.5 states the following:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Public Resources Code, Section 5097.98

Public Resources Code Section 5097.98 states that whenever the NAHC receives notification of Native American human remains from a county coroner, the NAHC shall immediately notify the most likely descendant (MLD). The MLD may, with permission from the owner of the land on which the human remains were found, inspect the site and recommend to the owner or the responsible party conducting the excavation work a means for treating and/or disposing of the human remains and any associated grave goods. The MLD is required to complete their site inspection and make their recommendation within 48 hours of their notification from the NAHC.

Health and Safety Code, Section 7052 and 7050.5

Section 7052 of the Health and Safety Code states that the disturbance, mutilation, or removal of interred human remains is a felony if the remains are within a dedicated cemetery and a misdemeanor if interred outside of a dedicated cemetery. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner examines the find and determines whether the remains are subject to various laws, including recognizing whether the remains are or may be those of a Native American. If determined to be Native American, the coroner must contact the NAHC.

California Native American Graves Protection and Repatriation Act, Health and Safety Code Section 8010 through 8030

In California Health and Safety Code, Division 7, Part 2, Chapter 5 (the “Act”) broad provisions are made for the protection of Native American cultural resources. The Act sets the state policy to ensure that all California Native American human remains and cultural items are treated with due respect and dignity. The Act also provides the mechanism for disclosure and return of human remains and cultural items held by publicly funded agencies and museums in California. Likewise, the Act outlines the mechanism with which California Native American tribes not recognized by the federal government may file claims to human remains and cultural items held in agencies or museums.

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act applies to both state and private lands. This law requires that if human remains are discovered, construction or excavation activity must cease, and the County coroner must be notified. If the remains are of a Native American, the coroner must notify the NAHC. The NAHC then notifies those persons most likely to be descended from the Native American whose remains were discovered. The California Native American Historical, Cultural, and Sacred Sites Act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

California Health and Safety Code

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and

disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the county coroner has examined the remains (Section 7050.5b). PRC Section 5097.98 also outlines the process to be followed if remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the California NAHC within 24 hours (Section 7050.5c). The NAHC will notify the most likely descendant. With the permission of the landowner, the most likely descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the most likely descendant by the NAHC. The most likely descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains, and items associated with Native Americans.

LOCAL

SACRAMENTO COUNTY GENERAL PLAN

CULTURAL RESOURCES

The *Sacramento County General Plan of 2005-2030* (Sacramento County 2011, as updated in 2017) Conservation Element, states under Section VI, Cultural Resources, the following goal and six objectives:

Promote the inventory, protection and interpretation of the cultural heritage of Sacramento County, including historical and archaeological settings, sites, buildings, features, artifacts and/or areas of ethnic historical, religious or socio-economic importance.

1. Comprehensive knowledge of archeological and historical site locations.

2. Attention and care during project review and construction to ensure that cultural resource sites, either previously known or discovered on the project site, are properly protected with sensitivity to Native American values.

3. Structures with architectural or historical importance preserved to maintain contributing design elements.

4. Known cultural resources protected from vandalism, unauthorized excavation, or accidental destruction.

5. Properly stored and classified artifacts for ongoing study.

6. Public awareness and appreciation of both visible and intangible historic and cultural resources.

To implement the primary goal and the objectives, the Conservation Element contains the following policies relevant to the project:

Policy CO-150: Utilize local, state and national resources, such as the North Central Information Center (NCIC), to assist in determining the need for a cultural resources survey during project review.

Policy CO-152: Consultations with Native American tribes shall be handled with confidentiality and respect regarding sensitive cultural resources on traditional tribal lands.

Policy CO-154: Protection of significant indigenous, ethno-historic and historic sites within open space easements to ensure that these resources are preserved in situ for perpetuity.

Policy CO-155: Native American burial sites encountered during preapproved survey or during construction shall, whenever possible, remain in situ. Excavation and reburial shall occur when in situ preservation is not possible or when the archeological significance of the site merits excavation and recording procedure. On-site reinternment shall have priority. The project developer shall provide the burden of proof that off-site reinternment is the only feasible alternative. Reinternment shall be the responsibility of local tribal representatives.

CO-156: The cost of all excavation conducted prior to completion of the project shall be the responsibility of the project developer.

CO-157: Monitor projects during construction to ensure crews follow proper reporting, safeguards, and Policy procedures.

CO-158: As a condition of approval of discretionary permits, a procedure shall be included to cover the potential discovery of archaeological resources during development or construction.

CO-159: Request a Native American Statement as part of the environmental review process on development projects with identified cultural resources.

CO-164: Structures having historical and architectural importance shall be preserved and protected.

CO-166: Development surrounding areas of historic significance shall have compatible design to protect and enhance the historic quality of the areas.

CO-169: Restrict the circulation of cultural resource location information to prevent potential site vandalism. This information is exempt from the "Freedom of Information Act".

CO-171: Design and implement interpretive programs about known archeological or historical sites on public lands or in public facilities. Interpretation near or upon known sites should be undertaken only when adequate security is available to protect the site and its resources.

SIGNIFICANCE CRITERIA AND METHODOLOGY

SIGNIFICANCE CRITERIA

Section 15064.5(b)(1) of the State CEQA Guidelines provides that a project may cause a significant environmental effect where the project could result in a substantial adverse change in the significance of a historical resource. State CEQA Guidelines Section 15064.5 defines a "substantial adverse change" in the significance of a historical resource to mean physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be "materially impaired." Section 15064.5(b)(2) of the State CEQA Guidelines (defines "materially impaired" for purposes of the definition of "substantial adverse change" as follows:

The significance of a historical resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that conveys its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to PRC Section 5020.1(k) or its identification in an historical resources survey meeting the requirements of PRC Section 5024.1(g), unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that conveys its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA. In accordance with Section 15064.5(b)(3) of the State CEQA Guidelines, a project that would have a potential material impact on a historic resource that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings is considered to have mitigated impacts on historic resources to a less than significant level.

METHODOLOGY

ECORP requested a records search for the property at the North Central Information Center (NCIC) of the CHRIS at California State University-Sacramento on April 18, 2022 (NCIC search #SAC-22-87, and again on January 22, 2025 (SAC-25-24). The purpose of the records search was to determine the extent of previous surveys within a 0.5-mile (800-meter) radius of the proposed project location, and whether previously documented indigenous or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area. NCIC staff completed and returned the records search to ECORP on April 19, 2022, and again on January 22, 2025.

In addition to the official records and maps for archaeological sites and surveys in Sacramento County, the following historic references were also reviewed:

- Built Environment Resource Directory (BERD; OHP, 2020);
- Historic Property Data File for Sacramento County (OHP, 2012);
- The National Register Information System (National Park Service [NPS], 2021); Office of Historic Preservation, California Historical Landmarks (CHL; OHP, 2021); *CHL* (OHP 1996 and updates);
- California Points of Historical Interest (OHP 1992 and updates);
- Directory of Properties in the Historical Resources Inventory (1999);
- Caltrans Local Bridge Survey (California Department of Transportation [Caltrans], 2019);
- Caltrans State Bridge Survey (Caltrans, 2018); and
- Historic Spots in California (Kyle, 2002).

Other references examined include a RealQuest Property Search and historic General Land Office (GLO) land patent records (Bureau of Land Management [BLM] 2021). Historic maps reviewed include:

- 1871 BLM GLO Plat map for Township 9 North Range 6 East;
- 1893 USGS Sacramento, California topographic quadrangle map (1:250,000 scale);
- 1902 USGS Fair Oaks, California topographic quadrangle map (1:62,500 scale);
- 1951 USGS Citrus Heights, California topographic quadrangle map (1:24,000 scale);

- 1967 (photorevised 1969) USGS Citrus Heights, California topographic quadrangle map (1:24,000 scale).

Additionally, ECORP reviewed historic aerial photos taken in 1937, 1952, 1958, 1971, 1981, 1993, 1998, and 2002-2021 for any indications of property usage and built environment.

Sacred Lands File Coordination Methods

The NAHC maintains a confidential Sacred Lands File (SLF) which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on April 24th, 2023, and again on February 3, 2025, to request a search for known sacred lands within the project vicinity. The NAHC responded to the request on May 30, 2023, with negative results and again on February 3, 2025, with negative results. Consultation with tribes who are traditionally and culturally affiliated with the geographic area associated with the project site pursuant to Assembly Bill 52 and its relevant implementing regulations was conducted by the County of Sacramento on September 9, 2022. Refer to Chapter 11, Tribal Cultural Resources of this Draft EIR for further information.

Other Interested Party Consultation Methods

ECORP mailed letters to the Sacramento Historical Society on April 18, 2022, and again on February 3, 2025, to solicit comments or obtain historical information that the repository might have regarding events, people, or resources of historical significance in the area (ECORP, 2021).

Field Methods

ECORP subjected the area of potential effect (APE) to an intensive pedestrian survey from January 27-30th, February 5, 10, and 11, and on March 21, 2025, under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties* (NPS 1983) using 15-meter transects. At the time, the ground surface was examined for indications of surface or subsurface cultural resources. The general morphological characteristics of the ground surface were inspected for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches. Whenever possible, ECORP examined the locations of subsurface exposures caused by such factors as rodent activity, water or soil erosion, or vegetation disturbances for artifacts or for indications of buried deposits. No subsurface investigations or artifact collections were undertaken during the pedestrian survey.

Results

NCIC Records Search

The records search consisted of a review of previous research and literature, records on file with the NCIC for previously recorded resources, and historical aerial photographs and maps of the vicinity. Of the previous cultural studies conducted, 13 reports occur

within 0.5 miles of the project site (refer to Table CR-1). Four studies directly intersect the project site. 39 cultural and archaeological resources have been identified within 0.5 miles of the project site (intersecting resources are listed in Table CR-2).

Table CR-1: Previous Cultural Studies In or Within 0.5 Mile of the Project Site

Report No.	Author(s)	Report Title	Year
4519	Susan Lindstrom	A Cultural Resource Evaluation of Aerojet General Corporation, Sacramento Plant, Sacramento County	1989
7959	Margaret E. Scully	An Archaeological Survey of the James Yost Use Permit Area (Control No.: 88-UP-1411)	1989
7960	Derr, Eleanor	Cultural Resources Study of the Prairie City OHV State Park, Sacramento County, California	1989
8994	ECORP	Cultural Resources Survey Report 69KV Alignment, Sacramento County, California	2007
9364	Jason Coleman	Cultural Resources Investigations for the White Rock Road Widening Project, Sacramento County, California	2008
9987	ECORP	Cultural Resources Survey Report 69KV Alignment Addendum, Sacramento County, California	2008
10587	Alicia C. Perez and Kelly Long	Cultural Resource Inventory for the Prairie City State Vehicular Recreation Area	2010
10588	Jason Coleman	Cultural Resource Inventory for the Widening Project Sunrise Boulevard to Nimbus Road	2010
10946	Solano Archaeological Services	Cultural Resources Inventory and Evaluation Report for the White Rock Road Widening Project, Sacramento County, California	2011
10946-A	Donaldson, Milford Wayne	SPK-2011-00276; White Rock Road Widening Project. Sacramento County, California SHPO Concurrence Letter, COE110914C	2011
12347	Bowen, Madeline	Historic Property Survey Report for the White Rock Road Widening Project between Sunrise Boulevard and Grant Line Road	2015
12347-A	Bowen, Madeline	Historical Resources Evaluation Report for the White Rock Road Widening Project between Sunrise Boulevard and Grant Line Road	2015
12347-B	Jurich, Denise	Archaeological Survey Report for the White Rock Road Widening Project between Sunrise Boulevard and Grant Line Road	2015
12347-C	Bowen, Madeline	Finding of Effect: White Rock Road Widening Project between Sunrise	2015

Report No.	Author(s)	Report Title	Year
		Boulevard and Grant Line Road, Sacramento County	
12347-D	Stratton, Susan, Milford Wayne Donaldson, and Dr. Kathleen Dadey	SPK-1999-00590; Rio Del Oro Project, Sacramento County, California	2011
012347-E	Polanco, Julianne, and Anmarie Medin	Finding of Effect for the Proposed White Rock Road Widening Project, Rancho Cordova, Sacramento County, California	2015
12347-F	Roland-Nawi, Carol, and Susan Bauer	Determinations of Eligibility for the Proposed White Rock Road Widening Project, Rancho Cordova, Sacramento County, CA	2015
12935	Melvin, Steven J., Bryan Larson, Naomi Scher, and Sarah Izzi	Cultural Resources Survey and Evaluation Report in Support of the Prairie City State Vehicular Recreation Area Road and Trail Management Plan, Sacramento County, California	2019
14500	Tanksley, Kim	Archaeological Survey Report for the Capital Southeast Connector: D2 Expressway Project, Sacramento County, California, STPL 6498(001)	2017
14500-B	Adams, Jeremy	Historical Resources Evaluation Report for the Capital Southeast Connector: D2 Expressway Project, Sacramento County, California, STPL 6498(001)	2017
14500-C	Polanco, Julianne, Natalie Lindquist, Alicia Perez, and Laura Loeffler	Determinations of Eligibility for the Proposed Capital South East Connector D2 Project, Sacramento County, CA (FHWA_2017 0301_001)	2017
N/A	ECORP Consulting, Inc.	Cultural Resources Inventory Report for the Westborough Project	2023
N/A	ECORP Consulting, Inc.	Built Environment Resources Evaluation Report for the Westborough Project	2023

The records search also determined that 17 previously recorded cultural resources are located within 0.5 miles of the project area. All of these are historic-era resources associated with early mining activities and rocket development. Two previously recorded cultural resources are located within the project area (Table CR-2).

Table CR-2: Previously Recorded Cultural Resources Within Project Area

Site Number CA-SAC	Primary Number P-34	Recorder and Year	Age / Period	Site Description
308H	335	Various, 1969-2023	Historic	Folsom Mining District, American River Placer Mining District
1013H	1710	Various, 1989-2023	Historic	Natomas Aerojet Dredge Fields

FOLSOM MINING DISTRICT AND AMERICAN RIVER PLACER MINING DISTRICT

A historic district is a discrete area composed of a concentration of sites, features, and/or objects (which may include buildings and structures) that are related historically by function, theme, plan, or physical development. From the archaeologist's perspective, a district is a grouping of archaeological sites related principally by their common components (Townsend et al. 1993:9-11). Archaeological districts are also defined as a significant concentration, linkage, or continuity of sites important in history. Examples of historic archaeological districts may consist of ranches, farms, mining landscapes, and historic town sites that contain a subsurface element. The same criteria are applied to pre-contact indigenous districts, which may consist of interconnected village sites, temporary camping sites, and a combination of archaeological sites, ethnographic landscapes, and/or traditional cultural properties. Built environment districts are those that are composed of extant buildings and structures, regardless of whether they are in current use (ECORP, 2021).

Large mining and agricultural sites can fall into the category of district and due to the characteristic of mining sites to cover broad spans of land, complex mining sites are often recorded as districts. Shared elements of a mining district all play a part in the extraction, refinement, and production of minerals. Whether mining resources are recorded as a series of features within a site or multiple sites within a district depends on the complexity and size of the enterprise, as well as association, temporal period, and mineral being extracted. An important distinction is whether a site or feature is a non-contributing element of a district or a contributing element (where individually it might not meet eligibility criteria of significance). Discontinuous districts may also be appropriate where elements of a site are spatially separated and discrete, and where the space between them does not contribute to the significance of the district (Noble and Spude 1997:22).

The Folsom Mining District and the American River Placer Mining District are elements of one recorded site that spans the entire region, CA-SAC-308H. The site began with a small Chinese mining site in Folsom (see Tordoff 1994; PAR 1991; Clark 1970; Peak 1978; Lindström 1989; and others) but grew through accretion to a site measuring as much as 70 square miles, in response to a need to quickly record and manage impacts created by a building boom decades ago (ECORP, 2021).

William Clark's 1970 "Gold Districts of California" provides one of the earliest mentions of a large, regional district, which he named the "Folsom District." Described as primarily a dredging field spanning an area from Folsom, to the southwest, ending at

Mather Field, the district is located on both sides of the American River and is approximately 10 miles long and seven miles wide. Clark also explained that the district has been known as the "American River District." No mention of the CA-SAC-308H designation was found in Clark's report. However, it was someone with the initials of K.G.S. who first formally recorded CA-SAC-308H in 1969, but not as the Folsom District that was described by Clark. The site was recorded initially as an area of Chinese mining tunnels and ground sluices located 0.5-mile northeast of U.S. Highway 50 and the Folsom Boulevard interchange. The site measured 0.25 miles by 150 yards in size. The record was updated in 1989 by Strand (Tordoff 1994).

Lindström (1989) later described site 4-SAC-308 (CA-SAC-308H) as the Natoma Ground Sluice Diggings Site (NGSDS). Lindström also stated, when comparing the adjacent Alder Creek Corridor Mining District (ACCMD) with the NGSDS that the NGSDS was limited to only ground-sluicing features and did not contain any archaeological features related to early mining technology such as shallow placering, drift mining, or hydraulic mining. During Lindström's study, she recorded what later became known as the ACCMD, as well as the Natomas-Aerojet Dredge Fields, both of which were later lumped into site CA-SAC- 308H by the NCIC (ECORP, 2021).

The wider landscape of Folsom mining features has been subject to site-grouping. In 1992, PAR documented the expansive American River District boundary, which was later linked to CA-SAC-308H. PAR (1992) described the American River District as follows:

"The American River Placer Mining District… includes a large area that was subjected to a variety of placer mining techniques over a long period of time…The boundaries of the American River Placer Mining District encompass the area subjected to placer mining by hand and mechanical methods using water from the South Fork of the American River, as described in historical documents (i.e., mining reports and articles, maps, county histories). Generally, it extends northeast to southwest from Salmon Falls to Douglas Road and Mather Air Force Base and east/west from the Sacramento/El Dorado County line to the Goethe Park in Rancho Cordova. This encompasses an area measuring approximately 15 miles (N/S) by 11 miles (E/W). While most of the district is on the south side of the American River, several pockets of land are included on the north side of the river as well, notably at Mississippi, Sailor, and Sacramento bars."

In Far Western's 1997 report for the Folsom East Interceptor, CA-SAC-308H was described as: "… a huge complex of dredge tailings and other historic mining remains south of the American River and south/southwest of the city of Folsom; this area is known historically as the Folsom Gold Mining District or the American River Gold Mining District" (Clark, 1980). Various portions of the district, including the Natoma Ground Sluice Diggings and the Natomas-Intel Dredge Field, have been destroyed by recent development… many other portions of the district remain unrecorded or unevaluated." Far Western also described CA-SAC-308H as containing the NGSD and the Natoma Dredge Fields. Later in the report, Far Western included several mining sites recorded during the Broadstone development and the Highway 50 Interchange projects (north of Highway 50) as part of the American River placer mining district, also given the

designation CA-SAC-308H. Over time, the folding of sites into one trinomial, CA-SAC-308H, led to an unmanageable and extremely large cultural resource (ECORP, 2021).

Windmiller (2006) described the difficulty surrounding the CA-SAC-308H designation: "One complicating factor in identifying cultural resources … was the decision by North Central Information Center staff years ago to allow all mining features in the Folsom area to be recorded as one "site" designated by the trinomial "CA-SAC-308-H." Each "new" site identified by an archaeologist then became another feature of CA-SAC-308-H instead of an archaeological site in its own right. This decision defied common practice in California archaeology and has led to considerable confusion… "CA-SAC-308-H" was originally applied by the information center to the Natoma Ground Sluice Diggings site at the corner of Folsom Boulevard and Highway 50. This original designation was in keeping with the conventional manner in which archaeologists apply reference numbers to archaeological sites. However, the same designation was expanded to encompass all mining sites within what was defined as the American River Placer Mining District, instead of giving each mining site within the district a separate trinomial type of designation" (Windmiller, 2006:24).

Therefore, Folsom Mining District, American River Placer Mining District, and CA-SAC-308H are all recognized as one in the same. A portion of CA-SAC-308H (Chinese mining features only) has been evaluated as eligible for the NRHP, but the balance of the site is composed of a wide array of historic mining features that are not definitively related in time or function to one another. These are, therefore, referred to informally as "paper districts," meaning that the designation of a "district" does not necessarily meet the technical or regulatory definition of the same. Therefore, while CA-SAC-308H technically encompasses the current project area, the mining-related resources that manifest inside of it are more appropriately affiliated with the NADF District, as described below (ECORP., 2025).

NATOMAS-AEROJET DREDGE FIELDS (NADF)

The "Natomas-Aerojet Dredge District" (P-34-1710; NADF) was described by Lindstrom as "a relatively amorphous zone of more than 5,100 acres of mounded cobbles and tailings produced by bucket-line dredging by the Natomas Company between 1905 and 1962". These tailing piles are the subject of the proposed project and are clearly visible on the ground, on topographic maps, and on aerial photographs. Lindstrom further states that a small dry-land dredge was deposited by an unknown operator in the 1930s and the General Dredging Company operated a dragline dredge in Alder Creek in the 1940s. Artifacts and features associated with the dredging include extensive tailings mounds, wire rope, riveted pipe, prospect pits, ditch systems, earthen dams, and settling ponds.

The NADF (CA-SAC-1013-H) are composed of placer mining tailings that were deposited by dredges between circa 1900 and 1946 (Lindstrom, 1989).

AEROJET CAMPUS

Aerojet is an aerospace defense contractor founded in 1942 by Dr. Theodore von Karman, an aerodynamicist. The company's first product was Jet-Assisted Take-Off

rockets (JATOs) which boosted aircraft off short runways and carrier decks during WWII. Two previously recorded buildings were identified within the project site, Buildings 46014 and 46043. Of note, Building 46104 is listed as a temporary building that is now destroyed. Building 46043 is also considered a temporary structure, currently being used for storage (ECORP, 2025).

Other Records

The National Register Information System (NPS 2022) failed to reveal any eligible or listed properties within the project area. The nearest National Register property is the American River Grange Hall No. 172, located at 7270 Kilgore Road in Rancho Cordova, approximately 3.4 miles west of the project area.

ECORP reviewed resources listed as *California Historical Landmarks* (OHP, 1996) by the OHP (2022) on January 29, 2025. The nearest landmark listed is No. 689, Fifteen Mile House-Overland Pony Express Route in California. The plaque is located at the corner of White Rock Road and Gold Valley Road, approximately 2.6 miles west of the Project Area.

Historic Spots in California (Kyle, 2002) mentions the Rancho Rio de los Americanos Mexican Land Grant, granted to William A. Leidesdorff in 1844. The land grant consisted of over 35,500 acres and encompasses the project area. Kyle also describes several historic mining camps along the American River such as Prairie City, Rhoad's Diggings, Alder Creek, and Willow Springs Hill Diggings, all located in the general vicinity east of the Project Area. Kyle also mentions several historic landmarks associated with the City of Folsom.

Historic GLO land patent records from the BLM's patent information database (BLM 2022) revealed that the entire project area was patented to Joseph L. Folsom, Henry W. Hallock, Guillermo A. Leidesdorff, Archibald C. Peachy, Anna Marie Sparks, and Peter Warren Vanwinckle in 1864 under the California Land Act of 1851 (9 Stat. 631). This provision established a legal process whereby recipients of Mexican Land Grants in California could petition to have their land claim upheld by the U.S. following the Mexican–American War (1846 to 1848).

The Handbook of North American Indians (Wilson and Towne, 1978) lists the nearest Native American villages as Yodok and Shiba. Both villages are located on the northern bank of the American River, north of the project site. No Native American resources are known to exist within the project area. Additional information on Tribal Cultural Resources can be found in Chapter 13: Tribal Cultural Resources.

The OHP's Built Environment Resource Directory (BERD) for Sacramento County (dated September 23, 2023) lists one resource within the project area and seven additional resources within 0.5 mile of the project area (OHP, 2023; Table CR-3). The buildings contributing to P-34-4137 are not within the project site.

Table CR-3: OHP BERD Listed Properties in or Within 0.5 Mile of the Project Area

OTIS ID	Resource Name	Evaluation Status
514835	Douglas Missile Test Facility District (P-34-4137)	Contributor to a multi-component resource determined eligible for NRHP by consensus through the Section 106 process. (Douglas Missile Test Facility District, listed in CRHR)
514836	Alpha Test Complex (Contributor to P-34-4137)	Contributor to a multi-component resource determined eligible for NRHP by consensus through the Section 106 process. (Douglas Missile Test Facility District, listed in CRHR)
514837	Beta Test Complex (Contributor to P-34-4137)	Contributor to a multi-component resource determined eligible for NRHP by consensus through the Section 106 process. (Douglas Missile Test Facility District, listed in CRHR)
514838	Gamma Test Complex (Contributor to P-34-4137)	Contributor to a multi-component resource determined eligible for NRHP by consensus through the Section 106 process. (Douglas Missile Test Facility District, listed in CRHR)
514839	Kappa Test Complex (Contributor to P-34-4137)	Contributor to a multi-component resource determined eligible for NRHP by consensus through the Section 106 process. (Douglas Missile Test Facility District, listed in CRHR)
514840	Sigma Test Complex (Contributor to P-34-4137)	Contributor to a multi-component resource determined eligible for NRHP by consensus through the Section 106 process. (Douglas Missile Test Facility District, listed in CRHR)
514841	Solid Propellant Assembly Area (Contributor to P-34-4137)	Contributor to a multi-component resource determined eligible for NRHP by consensus through the Section 106 process. (Douglas Missile Test Facility District, listed in CRHR)
667695	Rebel Hill Ditch (P-34-5194)	Contributor to a multi-component resource determined eligible for NRHP by consensus through the Section 106 process. (Folsom Mining District, American River Placer Mining District, listed in CRHR

Field Results

In addition to the known historic-era mining districts and dredge fields, the 2025 survey by ECORP identified previously unrecorded segments of P-34-5194 (Rebel Hill Ditch) within the project area and GA-02 (Ney School).

Rebel Hill Ditch

ECORP assessed the integrity of the newly recorded segments during the 2025 field survey and found that although several segments of the ditch have been improved with either gunite lining or piping, the ditch overall retains sufficient integrity to remain eligible.

NEY SCHOOL

ECORP identified and assessed the integrity of a series of features associated with the former location of Ney School. While the building itself was relocated outside the Project Area, the features retain several characteristics reflective of potential NRHP/CRHR eligibility.

IMPACTS AND ANALYSIS

IMPACT CR-1: CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORICAL RESOURCE PURSUANT TO SECTION 15064.5.

The project site was evaluated for significance under applicable criteria, including those for the National Register and California Register and local designation programs (see Regulatory Setting, above). Evaluation was conducted considering the historic context themes and property types identified by the combined survey efforts of Lindstrom 1989, ECORP, 2007(a), 2007(b), ECORP, 2008, and ECORP, 2025. The potential impacts of the Project were analyzed in accordance with Section 15064.5 of the CEQA Guidelines. As such, the test for determining whether a proposed project would have a significant impact on an identified historical resource is whether or not the project would alter in an adverse manner the physical integrity of the historical resource such that it would no longer be eligible for listing in the National or California Registers or other landmark programs. Projects that may affect historical resources are considered to have less-than-significant impacts if they are consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

The mining of contributing historic features (mine tailings) being the chief endeavor of the proposed project ensures that the tailings represented throughout the intersecting historic mining districts will be significantly altered from their current state. If project implementation would alter in an adverse manner the physical integrity of the historical resource such that it would no longer be eligible for listing in the National or California Registers or other landmark programs, then it would result in a ***potentially significant impact.*** Whether the alteration of the tailings, Ney School site, and artifacts will contribute to a significant adverse impact based on the resource's eligibility is discussed below.

RESOURCE ELIGIBILITY

NADF (CA-SAC-1013H)

The earliest evaluations of the NADF (Lindstrom 1989) reflected that the dredge fields did not seem to meet the eligibility criteria for CEQA Section 15064.5(b)(2)(1) that would recognize the resource as eligible for inclusion in the California Register. This determination was confirmed by a number of qualified archaeologists in surveys

spanning decades to present day. Thus, the NADF is not considered adversely affected per the guidelines of CEQA Section 15064.5(b)(2)(1): “Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register.”

In a letter to the U.S. Army Engineer District, Sacramento Corps of Engineers on behalf of the Glenborough at Easton and Easton Place Project (ECORP Consulting, Inc., 2008) dated August 12th, 2010, the State Historic Preservation Office (SHPO) concurred with the findings of ECORP’s Cultural Resource Inventory of the NADF which found the district ineligible for NRHP inclusion (See Appendix CR-1). As an ineligible resource, the criteria set forth under CEQA Section 15064.5(b)(2)(2): “Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to PRC Section 5020.1(k) or its identification in an historical resources survey meeting the requirements of PRC Section 5024.1(g), unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant” do not apply.

In accordance with Section 15064.5(b)(3) of the State CEQA Guidelines, a project that would have a potential material impact on a historic resource that follows the Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings is considered to have mitigated impacts on historic resources to a less than significant level. As a district with no contributing historic buildings, the considerations of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings do not apply.

FOLSOM MINING DISTRICT (CA-SAC-308H)

The Folsom Mining District, American River Placer Mining District, and CA-SAC-308H are recognized as the same historic district and resource. A portion of CA-SAC-308H (Chinese diggings only) has been evaluated as eligible for the NRHP, but the balance of the site is composed of a wide array of historic mining features that are not necessarily related in time or function to one another. These are, therefore, referred to informally as “paper districts,” meaning that the designation of a “district” does not necessarily meet the technical or regulatory definition of the same. Therefore, while CA-SAC-308H technically encompasses the current project area, the mining-related resources that manifest inside of it are more appropriately affiliated with the NADF. Thus, the Folsom Mining District is not considered adversely affected per the guidelines of CEQA Section 15064.5(b)(2)(1): “Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register.”

The eligible sections of CA-SAC-308H are not indicated within the boundaries of the proposed project site. As such, the guidelines set forth by CEQA Section 15064.5(b)(2)(2): “Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to PRC Section 5020.1(k) or its identification in an historical resources survey meeting the requirements of PRC Section 5024.1(g), unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant” do not apply.

In accordance with Section 15064.5(b)(3) of the State CEQA Guidelines, a project that would have a potential material impact on a historic resource that follows the Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings is considered to have mitigated impacts on historic resources to a less than significant level. The section of the Folsom Mining District represented in the project site contains no contributing historic buildings. Thus, the considerations of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings do not apply.

AEROJET BUILDING 46104

P-34-2361’s Department of Parks and Recreation (DPR) Primary Record indicates in its most recent review that the building is no longer standing. The report concludes that the building was built with the intention of remaining as a temporary structure, only the road sign remains. As such, the previously recorded resource meets none of the criteria listed under CEQA Section 15064.5(b)(1).

AEROJET BUILDING 46043

P-34-2362 (Aerojet Building 46043) was once part of a complex of buildings used by the Air Force and Aerojet for rocket fuel testing and component manufacture. It is a simple steel manufactured building and has no defining architectural qualities. During its most recent survey, the building was noted to be in good condition. P-34-2362 is not listed as a contributing building of the Aerojet Rocketdyne Campus (see Table CR-3).

The current structure of the project site plans to avoid all Aerojet buildings and thus, impact criteria listed under CEQA Section 15064.5(b)(2)(1): “Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register” does not apply.

In its current eligibility status, the proposed project does not impact Aerojet buildings as defined in CEQA Section 15064.5(b)(2)(2): “Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to PRC Section 5020.1(k) or its identification in

an historical resources survey meeting the requirements of PRC Section 5024.1(g), unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant."

In accordance with Section 15064.5(b)(2)(3) of the State CEQA Guidelines, a project that would have a potential material impact on a historic resource that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings is considered to have mitigated impacts on historic resources to a less than significant level. Individually, Building 46043 only merits the considerations of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings in the event that Aerojet Campus is recognized as an eligible district and the resource is considered a contributing element. The building does not reflect a unique character, rare preservation, or other integrity that would merit considerations under NRHP Criterions B-D.

REBEL HILL DITCH

As an individual resource, the portions of Rebel Hill Ditch outside of the project area will remain intact and in their existing locations and current conditions. Additionally, portions of the ditch within the project area are piped or lined with gunite and no longer maintain integrity of materials, workmanship, design, or feeling. The project does not plan to alter the ditch; however, it does plan to excavate the lands surrounding the ditch within the project area, which could result in accidental damage to the resource without implementation of specific avoidance procedures.

NEY SCHOOL

The project plans to put a temporary above-ground conveyor over the school grounds during the project to transport the aggregate material to a processing facility. The conveyor route over the Ney School site cannot be avoided entirely; however, with appropriate avoidance procedures, any ground disturbance potentially caused by the conveyor machinery above the resource is unlikely to impact the Ney School site.

DIRECT IMPACTS

The current boundaries of the NADF do not constitute a Historic Resource under CEQA or a Historic Property under the National Historic Preservation Act (NHPA), and the removal of the tailings and features associated with this district would not result in a significant impact to a cultural resource meeting eligibility criterion for CEQA Section 15064.5(b)(2)(1). Likewise, the Folsom Mining District does not include known eligible resources within the project area that could be subject to potential impact. No subsurface activities are proposed for the project that would impact Rebel Hill Ditch or Ney School.

Mitigation of known, but ineligible resources typically include conducting a cultural resource inventory prior to project construction. The intensive survey and inventory encompassing the full project site ensures full recordation of known features and resources. Because of the robust tailings deposits, it is possible that preserved archaeological resources and features may exist within the project site that cannot be identified prior to construction, so mitigation is included to address the potential for inadvertent discoveries during project implementation. Therefore, direct impacts of the proposed project on historical resources are ***less than significant with mitigation.***

Indirect Impacts

The SHPO has previously stated that the Aerojet Campus may merit consideration as a historic district, with any buildings within the proposed project site being considered contributing elements to the district. Although Aerojet facilities are planned to be avoided by this project, it is pertinent to consider that the Aerojet Campus was originally sited among the NADF tailings specifically to provide visual and auditory isolation from neighboring communities and therefore, the removal of the tailings could result in an indirect effect to the district, if the tailings were considered a contributing feature of the district. According to OHP BERD listed properties, the Douglas Missile Test Facility District within Aerojet's property contains currently eligible elements that were constructed for the express purpose of missile testing, but not the tailings themselves (see Table CR-3). Therefore, removal of the tailings would not result in an indirect impact on a historic district, and indirect impacts of the proposed project on historical resources is ***less than significant.***

Impact CR-2: Cause a Substantial Adverse Change in the Significance of an Archaeological Resource Pursuant to Section 15064.5

To evaluate potential impacts to archaeological resources, ECORP conducted an Archaeological Resources Assessment and Cultural Resources Inventory for the project that included an archaeological data search. The research and field data incorporates a review of technical records of previous studies and findings related to archaeological resources. The data provided in each archaeological assessment was used to inform the environmental setting at the project site for archaeological resources as well as the probability of potential impacts to archaeological resources from implementation of the Project. The report's findings, in addition to thresholds of significance enumerated below, formed the basis of the impact determination. The archaeological assessments are referenced as "ECORP, 2021" and "ECORP, 2025".

Impact Analysis

As a result of the Archaeological Resources Assessment in 2025, ECORP identified four historic archaeological resources on the project Site: CA-SAC-308H (Folsom Mining District); CA-SAC-1013H (Natomas-Aerojet Dredge Fields); P-34-5194 (Rebel Hill Ditch); and GA-02 (Ney School). These resources are discussed in further detail

under the Environmental Setting section of this DEIR chapter. If implementation of the project would cause a substantial adverse change in the significance of the identified resources, then impacts to archaeological resources would be ***potentially significant.***

To assess the potential of the project to cause a substantial adverse change in the significance of the identified resources, the identified resources were analyzed for significance in accordance to PRC Section 5024.1(c)(1–4):

> CRHR / NRHP Criterion 1 or A: Research and surveys conducted by ECORP did not identify a clear association between the above resources and events important in history. Although the various forms of mining are considered a significant formative event in Sacramento County region, it has been determined that the features associated with these districts do not relate to any specific broader pattern that can be individually significantly associated with Sacramento County, California, or the nation and are therefore not eligible under CRHR Criterion 1 or NRHP Criterion A.
>
> CRHR / NRHP Criterion 2 or B: Research and surveys did not indicate that the families or companies who owned the parcels were historically significant to the local area or region. Additionally, the previously identified property owners did not make important contributions to the development of the area. No known significant individuals have any direct significant association with the resources identified. Therefore, these resources are not associated with the lives of persons significant in the past and is not eligible under CRHR Criterion 2 or NRHP Criterion B.
>
> CRHR / NRHP Criterion 3 or C: The features and resources documented are common design and construction with no architectural or historical distinctiveness. The resources are the contributing remnants of districts already found ineligible for NRHP and CRHR consideration. Therefore, the site features and artifacts do not embody the distinctive characteristics of a type, period or method of construction, or represent the work of a master, or possess high artistic values, or possess any significant distinguishable components and are not eligible under CRHR Criterion 3 or NRHP Criterion C.
>
> CRHR / NRHP Criterion 4 or D: The individually listed resources do not have potential to yield important information in prehistory or history. As a result, the site is not eligible under CRHR Criterion 4 or NRHP Criterion D.
>
> Integrity: The resources being a combination of several overlapping districts, the project site no longer retains integrity of feeling, association, workmanship, design, or materials because the site has been affected by Aerojet activities and many of the resources now lack context.

Both CEQA and Section 106 of the NHPA require the Lead Agency to address any unanticipated cultural resource discoveries during project construction, in which if a discovery is made, earthmoving activities must halt until a qualified archaeologist may

evaluate the resource encountered. With implementation of Mitigation Measure CR-1 and CR-2a and CR-2b, environmental impacts to potentially undiscovered, sensitive historical resources are considered ***less than significant with mitigation.***

IMPACT CR-3: DISTURB ANY HUMAN REMAINS, INCLUDING THOSE INTERRED OUTSIDE OF DEDICATED CEMETERIES

Archival research did not reveal the presence of burials or graves in the project site, nor did pedestrian surveys within the project site reveal features of concern. As a precaution for unintended discoveries, mitigation measures have been added in the event such a discovery is made. Archaeological deposits are frequently located in relatively close proximity to water sources and these deposits could contain human remains. Prior to mining activities, the project site was a known travel area for Nisenan living between the villages of Yodok and Natomo. Part of the Prairie City cemetery was also partially unearthed during the construction of the I-50 Prairie City Road off-ramp, just northeast of the project site boundary. Therefore, some potential for the presence of human remains may exist, and if adversely impacted during project implementation, impacts would be ***potentially significant***.

However, the project site has been previously altered by the creation of the mining tailings themselves and has been the subject of heavy disturbance by large machinery over the course of the last century. While surficial burials are unlikely to have survived undisturbed, grading and excavation have some potential to encounter buried human remains. If such remains were to be encountered, they would be protected under applicable regulations.

California PRC Section 5097.98, as amended by Assembly Bill 2641, protects cultural resources on public lands and provides procedures in the event human remains of Native American origin are discovered during project implementation and are required to address the Project's potential impacts to human remains. With the implementation of Mitigation Measure CR-3, environmental impacts to potential human remains are considered ***less than significant with mitigation.***

MITIGATION MEASURES

MITIGATION MEASURE CR-1: INADVERTENT CULTURAL RESOURCE DISCOVERY

In the event of an inadvertent discovery of cultural resources (historical, archaeological or tribal resources, excluding human remains) during construction, all work must halt within a 200-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained at the Applicant's expense to evaluate the significance of the find. If it is determined due to the types of deposits discovered that a Native American monitor is required, the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites as established by the Native American Heritage Commission shall be followed, and the monitor shall be retained at the Applicant's expense.

a. Work cannot continue within the 200-foot radius of the discovery site until the archaeologist and/or tribal monitor conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially eligible for listing on the National Register of Historic Places or California Register of Historical Resources.

b. If a potentially eligible resource is encountered, then the archaeologist and/or tribal monitor, Planning and Environmental Review Division staff, and project proponent shall arrange for either 1) total avoidance of the resource, if feasible; or 2) test excavations or total data recovery as mitigation. The determination shall be formally documented in writing and submitted to the County Environmental Coordinator as verification that the provisions of CEQA for managing unanticipated discoveries have been met.

Mitigation Measure CR-2a: Pre-Construction Worker's Environmental Awareness Program (WEAP) Training

The applicant shall ensure that a Worker's Environmental Awareness (WEAP) -level training is delivered to train equipment operators about cultural resources. The program shall be designed to inform construction personnel about: federal and state regulations pertaining to cultural resources and tribal cultural resources; the subsurface indicators of resources that shall require a work stoppage; procedures for notifying the lead agency of any occurrences; project-specific requirements including fencing and avoidance; and enforcement of penalties and repercussions for non-compliance with the program.

The training shall be prepared by a qualified professional archaeologist and may be provided either through a brochure, video, or in-person tailgate meeting, as determined appropriate by the archaeologist. The training shall be provided to all construction supervisors, forepersons, and operators of ground-disturbing equipment. All personnel shall be required to sign a training roster. The construction manager is responsible for ensuring that all required personnel receive the training. The construction manager shall provide a copy of the signed training roster to the lead agency as proof of compliance.

Mitigation Measure CR-2b: Temporary Exclusionary Fencing

To avoid damage to sensitive cultural resources within the project area, an exclusion zone marked by temporary construction fencing shall be erected adjacent to P-34-5194 (Rebel Hill Ditch) and around GA-02 (Ney School). Refer to the Ney School Avoidance and Minimization Plan provided in the ECORP Cultural Resources Inventory Report (ECORP, 2025, Section 7.3.3; Figure 24). The archaeologist conducting the Contractor Awareness Training shall identify the exclusion zone to construction personnel during the training.

Mitigation Measure CR-2c: Archeological Monitoring

Prior to the start of construction, the applicant shall retain a qualified professional archaeologist to monitor the installation and removal of the conveyor system at GA-02 (the Ney School Site). Monitors shall also be present during any vegetation removal or

initial ground-disturbing activities within 50 feet of GA-02 (Ney School). Monitoring is not necessary for normal maintenance activities, such as removing debris under the conveyor.

Mitigation Measure CR-3: Inadvertent Discovery of Human Remains

Pursuant to Sections 5097.97 and 5097.98 of the State Public Resources Code, and Section 7050.5 of the State Health and Safety Code, if a human bone or bone of unknown origin is found during construction, all work is to stop within 100 feet of the discovery, and the County coroner and Planning and Environmental Review Division (PER) shall be immediately notified. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission within 24 hours, and the Native American Heritage Commission shall identify the person or persons it believes to be the most likely descendent from the deceased Native American. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposition of, with appropriate dignity, the human remains and any associated grave goods. Additional mitigations are to be followed should the remains be identified as Native American (See Chapter 11: Tribal Cultural Resources, Mitigation Measure TCR-1).

8 GEOLOGY AND SOILS AND PALEONTOLOGICAL RESOURCES

INTRODUCTION

This chapter addresses the potential geology and soils impacts associated with the proposed White Rock North Mine project (proposed project). The analysis in this chapter considers the potential impacts of the project related to geology and soils regarding earthquakes, ground shaking, liquefaction, erosion, landslides, and soil instability. The chapter also considers paleontological resources, which are contained within geologic resources.

ENVIRONMENTAL SETTING

The overall project site is a portion of the existing Aerojet Rocketdyne property and contains several buildings/facilities, paved/unpaved roads, and windrow piles consisting of dredge tailing materials. The site is located within an area formerly known as the Natomas dredge field.

REGIONAL GEOLOGY

The Aerojet properties south of U.S. Highway 50 are located within the Sacramento Valley portion of the Great Valley geomorphic province of California. The Sacramento Valley is a northwest-trending basin filled with marine and continentally derived sediments to depths greater than 20,000 feet. The Valley extends roughly from Red Bluff to the north, to the San Joaquin Delta to the south, and is bound by the Sierra Nevada on the east and the Coast Ranges on the west. At the latitude of the site, the Sacramento Valley is approximately 45 miles wide.

Three geologic units are exposed in the site region. Pleistocene-age terrace deposits of the American River are 10-50 feet thick and are composed of a poorly sorted mixture of sand, silt, gravels, cobbles, and clay. In the vicinity of the Proposed Project, these deposits have been disturbed by gold dredging operations. The late Pliocene to early Pleistocene Laguna Formation comprises a heterogeneous assemblage of interbedded silt, clay, and sand with lenses of gravel.

These sediments underlie the terrace deposits, range from 100 to 200 feet thick at their eastern boundary, and thicken to the west. The Mehrten Formation of Pliocene age underlies the Laguna Formation.

PROJECT SITE GEOLOGY

The geology of the project site is dominated by dredge tailing piles of sand and gravel deposited by and mined from the ancestral American River (Plate GEO-1). The site is dominated by dredge tailings with small portions of the periphery within the Laguna and

Mehrten formations. Between approximately 1900 and 1962, placer gold was extracted from the area using various types of floating dredges. The dredges operated in artificial ponds filled by water from canals. As the dredge advanced operations it “moved” the pond by excavating in the front and placing spoils in the rear (GeoCon, 2020).

Dredge mining operations resulted in linear mounds of cobbles (tailings) throughout the project site. These tailing piles vary in height from just a few feet above the original ground surface to approximately 40 feet. The base of these piles is often between 100 and 300 feet wide. Tailing piles consist mainly of coarse rounded cobbles of varying sizes with some fine sediment and clay interspersed between the cobbles. The cobbles are highly permeable and facilitate rapid infiltration of water. The soil between the tailing piles generally consists of fine grained soils and clays commonly referred to as “slickens” (Compass Land Group, 2024).

Soils

Soils in the project area consist of gravelly loams, sandy clay loams, and other loams with varying degrees of clays, sands, and silt. Within slickens ponds (low-lying areas between dredge tailings), soils consist of sandy, silty clays with intermittent layers of clayey, sandy silts (Wallace Kuhl and Associates, Inc., 2007). The Natural Resources Conservation Service (NRCS) has mapped 5 soil units within the project area (NRCS, 2025). Table GEO-1 below summarizes the soil units mapped for the site by the NRCS. The distribution of these soil types is illustrated in Plate GEO-2. The project site is dominated by Xerorthents, dredge tailings on the majority of the project site.

Table GEO-1: NRCS Soils

Map Unit Symbol	Map Unit Name	Typical Profile
125	Corning complex, 0 to 8 percent slopes	H1 – 0 to 28 inches: gravelly loam H2 – 28 to 47 inches: gravelly loam H3 – 47 to 62 inches: stratified gravelly sandy loam to gravelly clay loam
192	Red Bluff loam, 2 to 5 percent slopes	H1 – 0 to 8 inches: loam H2 – 8 to 25 inches: clay loam H3 – 25 to 43 inches: clay loam H4 – 43 to 68 inches: gravelly clay loam
198	Redding gravelly loam, 0 to 8 percent slopes	A1 – 0 to 8 inches: gravelly loam A2 – 8 to 15 inches: gravelly loam A3 – 15 to 19 inches: gravelly loam
223	Slickens	H1 – 0 to 2 inches: variable H2 – 2 to 60 inches: variable
245	Xerorthents, dredge tailings, 2 to 50 percent slopes [dominant soil type]	H1 – 0 to 60 inches: fragmented material

Plate GEO-1: Site Geology

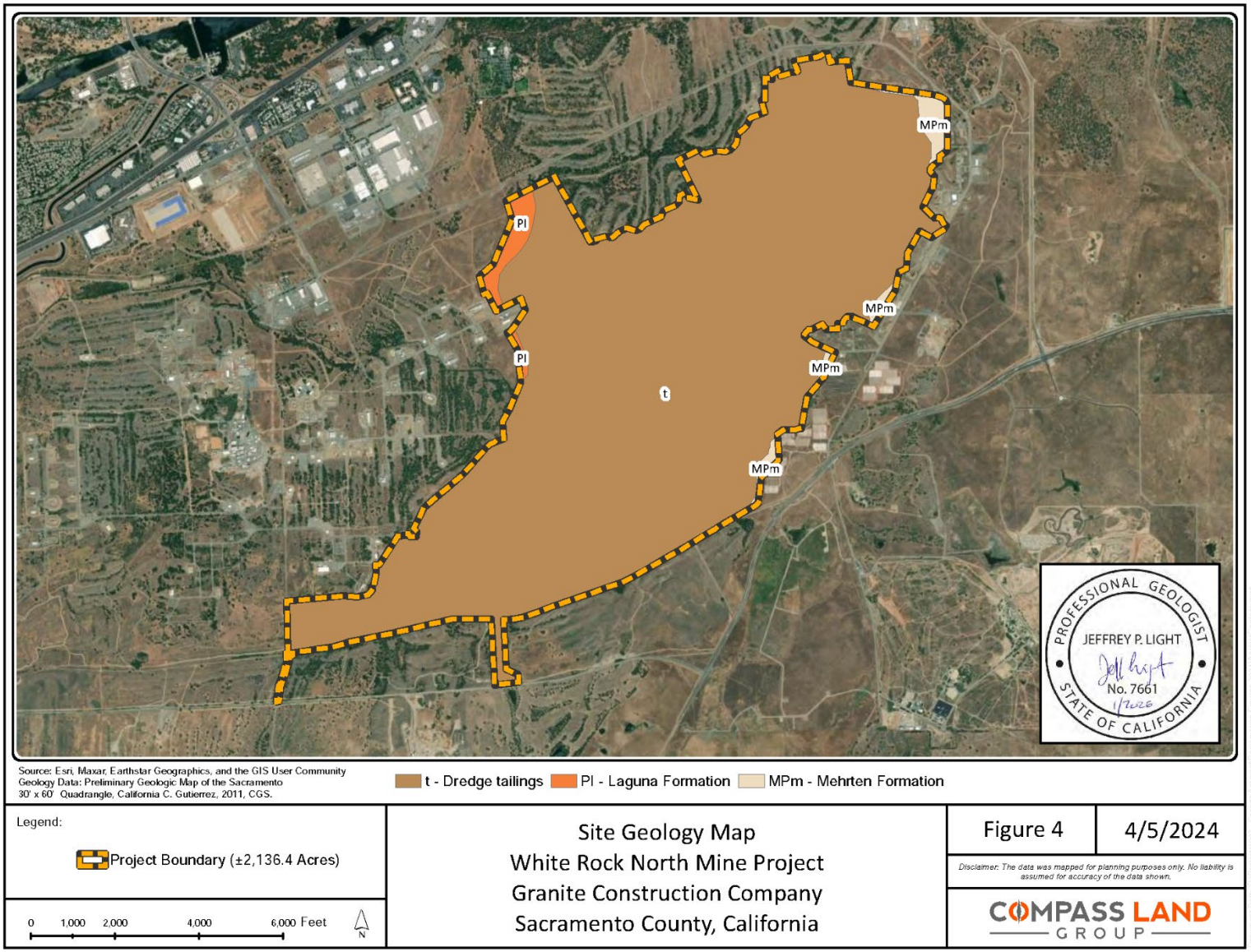
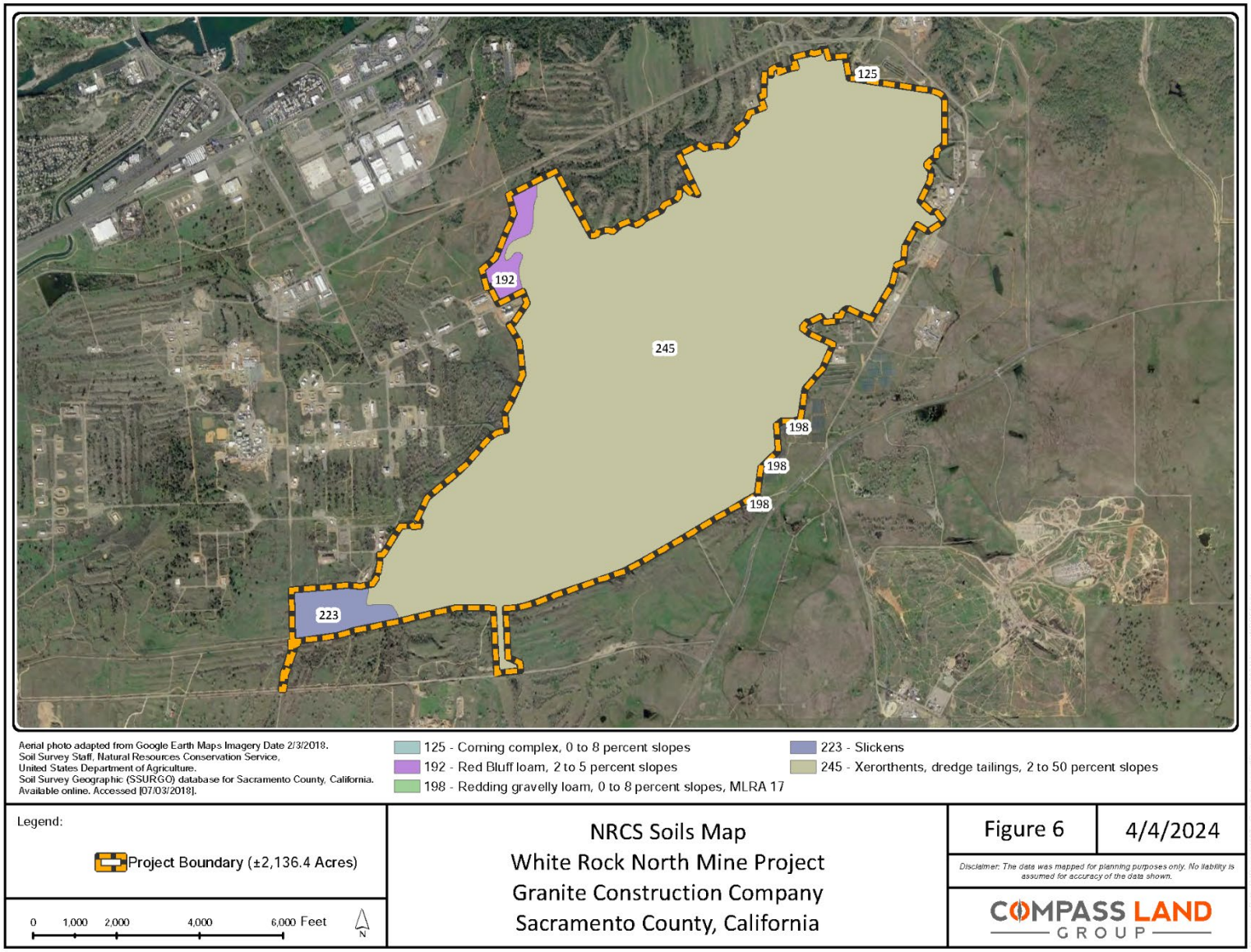


Plate GEO-2: NRCS Soils Map



Geological Hazards

Regional Faulting

The project area is situated relatively equidistant from major faults in Northern California and Nevada and is not within or adjacent to an Alquist-Priolo Earthquake Fault Zone or a seismic hazard zone. The nearest known active fault mapped is the Dunnigan Hills fault, located approximately 19 miles northwest of the City of Sacramento, which is estimated to be capable of producing an earthquake with a maximum possible Richter Scale magnitude of 6.0 (Sacramento County, 2011). The nearest branches of the active San Andreas Fault system are the Antioch, Green Valley and Concord faults, which are approximately 50 miles southwest of the project area. Other major active faults are the Hayward and Calaveras faults to the southwest, the Healdsburg-Rogers Creek fault to the west, the Bear Mountain and New Melones faults to the east, and the Stockton and Greenville faults to the south.

Active faulting has not been mapped through or near the project area. No known late Quaternary faults pass near or trend directly toward the project area as designated by the Alquist-Priolo Earthquake Fault Zone Act (California Geological Survey, 2025).

Liquefaction

Liquefaction occurs when ground shaking causes a sediment layer saturated with groundwater to lose strength and take on characteristics of fluids, therefore reducing the soil's ability to support the load of structures. As a result, structures could be shifted off balance or even destroyed under sufficient liquefaction conditions. Two possible liquefaction areas exist in Sacramento County: Sacramento city’s downtown area and the Delta area, which are approximately 20 and 47 miles from the project area, respectively (Sacramento County, 2011). Because the project area is not located within the vicinity of these areas, liquefaction is not reasonably anticipated to occur in the project area.

Soil Hazards

Subsidence

Subsidence is the gradual settling or sinking of Earth’s surface with little or no horizontal motion. Lands in Sacramento County may be affected by five types of subsidence: compaction of unconsolidated soils by earthquake shaking, compaction by heavy structures, the erosion of peat soils, peat oxidation, and fluid withdrawal. As discussed above, the likelihood for substantial seismic activity in the project area is low; thus, earthquake shaking is not a major source of subsidence. Subsidence related to peat soils and heavy structures has not been an issue in the project area. The pumping of water for residential, commercial, and agricultural uses from aquifers is the most common cause of subsidence in the County via the fluid withdrawal mechanism. Known subsidence areas generally occur in the far western portions of Sacramento County, west of Interstate Highway 5 (I-5). Although subsidence has caused substantial

problems in portions of the Delta and the San Joaquin Valley, it has not been a major concern in the project area.

Slope Instability and Landslides

A landslide is the downhill movement of masses of earth material under the force of gravity. The factors contributing to landslide potential are steep slopes, unstable terrain, and proximity to earthquake faults. This process typically involves the surface soil and an upper portion of the underlying bedrock. Expansive soil on slopes tends to shrink and swell in response to moisture content changes. During this shrinking and swelling process, gravity tends to work the soil downslope. Movement may be very rapid, or so slow that a change of position can be noted only over a period of weeks or years (creep). The size of a landslide can range from several square feet to several square miles.

The landslide potential for native and engineered slopes depends on the gradient, localized geology and soils, amount of rainfall, amount of excavation, and seismic activity. Only a narrow strip along the County's eastern boundary, from the Placer County line to the Cosumnes River, is considered to have landslide potential (Sacramento County, 2011). This landslide area is approximately 6 miles east of the project area.

Erosion

Erosion is a natural geological process by which landforms are worn down or reshaped by wind and water and the eroded materials are deposited elsewhere. Soil erosion can be accelerated when ground cover is removed from the ground surface, such as through over-grazing or from mechanical clearing for agriculture or construction. Table GEO-1 indicates the soil types on site. Soil map unit 245 (dredge tailings) comprises the majority of the site, and has no erosion to slight erosion potential.

Expansive Soils

Expansive soils are largely composed of clays, which greatly increase in volume when water is absorbed and shrink when dried (shrink-swell). Expansive soils are of concern because building foundations may rise during the rainy season and fall during the dry season in response to the clay's action. This movement may result in structural damage to buildings, including cracked foundations and interior and exterior walls, and warped doors and window frames.

Some soils in the project area exhibit properties of expansive soils (high clay content). Clays and clayey silts that occur throughout the project area (excluding the dredge tailings) have a very high expansion potential (Wallace Kuhl and Associates, Inc., 2007). Soils, aggregates, and sands associated with the dredge tailings exhibit low expansion potential.

Soil Settlement

Soil settlement occurs when low density soils are compacted, such as from fill placement and building construction. Low density soils are the result of soils settling out of suspension in water without being subjected to compaction. Clays and silts within the slickens ponds exhibit characteristics of low density soils and have a high risk of settlement if subject to compaction (Wallace Kuhl and Associates, Inc., 2007).

Naturally Occurring Asbestos

Where naturally occurring asbestos (NOA) is found, disturbance could cause cleavage of asbestos-bearing rocks, resulting in the release of asbestos fibers. Prolonged inhalation of asbestos fibers has been found to cause scarring of the lungs, lung cancer, and mesothelioma. Areas of concern producing NOA have been indicated in areas underlain by metavolcanic rock (i.e., Gopher Ridge Volcanics), and would be subject to the requirements of Section 93105, *Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations* of the California Code of regulations requirements. Metavolcanic rocks and other geologic materials of concern for NOAs are located approximately 6 miles east of Prairie City Road, beyond project area boundaries.

Paleontological Resources

An online paleontological records search was conducted on February 10, 2020, though the University of California Museum of Paleontology database for a project neighboring the project boundary. A formal letter request for records search was sent to the Museum of Natural History, Los Angeles on February 12, 2020 (ECORP, 2020). From those records, it was indicated that surface material consisting of tailings from mining operations can be up to 80 feet thick. Surface deposits are likely to be up to 80 feet thick over the natural geologic layers. According to Dr. Mcleod at the Museum of Natural History, Los Angeles, it is highly unlikely that the significant vertebrate fossils would be found in the dredge tailings located within the project area.

Regulatory Setting

State

Alquist-Priolo Earthquake Fault Zoning Act

The intent of the Alquist-Priolo Earthquake Fault Zoning Act of 1972 is to reduce the risk to life and property from surface fault rupture during earthquakes by regulating construction in active fault corridors and prohibiting the location of most types of structures intended for human occupancy across the traces of active faults. The act defines criteria for identifying active faults, giving legal support to terms such as active and inactive and establishes a process for reviewing building proposals in Earthquake Fault Zones. Before a project can be permitted in a designated Alquist-Priolo

Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults. However, no Alquist-Priolo Zones are mapped within the project site (California Department of Conservation, 2025).

Surface Mining and Reclamation Act

The State of California Surface Mining and Reclamation Act of 1975 (SMARA) is the primary regulation governing mining operations and mine reclamation. Its purposes are to ensure that adverse environmental effects are prevented or minimized; mined lands are reclaimed to a useable condition; production and conservation of minerals are encouraged while giving consideration to recreational, ecological, and aesthetic values; and residual hazards to public health and safety are eliminated. Local agencies are responsible for ensuring compliance with SMARA requirements for mine operation and reclamation.

SMARA mandates that the Mineral Resources Project classify lands throughout the state that contain regionally significant mineral resources. Furthermore, the Mineral Resources Project provides objective geologic expertise to lead agencies, operators, and the public. The Mineral Resources Project is administered by the California Geologic Survey. Through the SMARA Mineral Land Classification Project, the State Geologist identifies and maps mineral resources of the state (not including oil and gas) to show where economically significant mineral deposits occur and where they are likely to occur based upon the best available scientific data.

Mineral resources classified under the Mineral Land Classification Project include metals; industrial minerals; and construction aggregate, which include sand, gravel, and crushed stone. Special emphasis has been given to construction aggregate because it is the state's most important mineral commodity in terms of tonnage, value, and societal infrastructure. Local agencies are required to use the classification information when developing land-use plans and when making land-use decisions.

Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations

CARB has adopted an *Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations*. The statewide regulation requires use of control measures to minimize emissions of asbestos-laden dust. The ATCM applies to any size construction project although there are more stringent mitigation requirements for projects that exceed 1 acre. NOA is known to be present in eastern Sacramento County. In the project area, Sacramento Metropolitan Air Quality Management District (SMAQMD) has regulatory authority to ensure compliance with Asbestos ATCM.

LOCAL

SACRAMENTO COUNTY GENERAL PLAN

The General Plan contains goals and policies related to seismic and geologic hazards, and to conservation of soils. Applicable goals and objectives include maintaining a high level of public health and safety for all residents of Sacramento County while minimizing the loss of life, injury, and property damage due to seismic and geological hazards. The following are the most pertinent General Plan policies related to geology and soils that pertain to the project.

CO-37: Apply the aggregate resources combining land use category to additional areas as subsequent studies determine them to contain mineral resources which are feasible and appropriate for mining. The aggregate resources combining land use category shall not be a prerequisite to (SM) surface mining combining zoning or regulation through the procedures of an existing special planning area zoning designation in conjunction with proposed surface mining.

CO-39: Surface mining operations shall be subject to appropriate mitigation measures and shall avoid creating any significant nuisances, hazards, and adverse environmental impacts, unless the Board of Supervisors makes the findings to override as required by CEQA Guidelines Section 15091.

CO-40: Extractive uses and associated processing uses and facilities shall maintain adequate minimum setbacks to protect adjoining land uses.

CO-41: Surface mining shall not be allowed without adequate plans for reclamation of mined areas. Reclamation plans should be based on a plan for post-mining land use that is consistent with the land use strategies of the General Plan.

CO-57: In areas where topsoil mining is permitted, it shall be done so as to maintain the long-term productivity of the soil.

CO-161: As a condition of approval for discretionary projects, require appropriate mitigation to reduce potential impacts where development could adversely affect paleontological resources.

CO-162: Projects located within areas known to be sensitive for paleontological resources, should be monitored to ensure proper treatment of resources and to ensure crews follow proper reporting, safeguards and procedures.

SACRAMENTO COUNTY CODE, TITLE 16, CHAPTER 16.44

Sacramento County enacted the Land Grading and Erosion Control Ordinance for the express purpose of minimizing damage to surrounding properties and public rights-of-way; limiting degradation of the water quality of water courses; and curbing the

disruption of drainage system flow caused by the activities of clearing, grubbing, grading, filling, and excavating land. The ordinance establishes administrative procedures, minimum standards of review, and implementation and enforcement procedures for the control or erosion and sedimentation that are directly related to land grading activities.

The standards of the ordinance include the appropriate design and placement of erosion and sediment control best management practices (BMPs), as specified in the Sacramento County Guidance Manual for Development of Erosion and Sediment Control Plans. Erosion-control BMPs include seeding, mulching, vegetative buffer strips, sod, plastic covering, burlap covering, water and other measures that control the movement of the ground surface or soil. Sediment control measures include dikes, sediment detention traps, sediment detention basins, filters, fences, barriers, swales, berms, drains, check dams, and other measures that control the deposit of soil or earth material.

Significance Criteria and Methodology

Significance Criteria

For purposes of this EIR and consistent with the criteria presented in Appendix G of the CEQA Guidelines, impacts related to geology, soils, and paleontology may be considered significant if implementation of the proposed project would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

    a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; Refer to Division of Mines and Geology Special Publication 42;

    b. Strong seismic ground shaking;

    c. Seismic-related ground failure, including liquefaction; or

    d. Landslides.

2. Result in substantial soil erosion or loss of topsoil;

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

4. Be located on expansive soil[1] creating substantial direct or indirect risks to life or property;

5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or

6. Directly or indirectly destroy a unique paleontological resource or site unique geological feature.

Methodology

Impacts related to geologic, seismic, and soil-related hazards would be considered significant if they resulted in injury, structural collapse, unrepairable facility or utility damage, or severe service disruption. Impacts to paleontological resources would be considered significant if the project would disturb or destroy significant paleontological resources.

The impact analysis is based on geological information obtained from Sacramento County (2011), United States Department of Agriculture (USDA) and NRCS (NRCS; 2025), California Geological Survey (2006), and geological and environmental analyses (GeoCon, 2020). The project was analyzed in terms of its consistency with Sacramento County General Plan policies and potential for geologic or soils-related hazards to people and property in the project area. GeoCon Consultants, Inc. completed an engineering stability analysis for the Project in May 2020 (Appendix GS-1), including test pits for a slope stability evaluation.

Issues Not Discussed Further

Strong seismic ground shaking; Seismic-related ground failure, including liquefaction; or Substantial adverse effects related to landslides; Substantial adverse effects related to fault rupture.

As described in the environmental setting above, the project site is not located within an earthquake fault zone as mapped by the California Geological Survey. The site is also not contained within an Alquist-Priolo Earthquake Fault Zone. Faulting and strong seismic events are uncommon in the Sacramento Valley and the potential for surface rupture at the project site is considered low. Therefore, impacts related to seismic ground shaking are ***less than significant*** and not discussed further.

[1] The CBC, based on the International Building Code and the now defunct Uniform Building Code, no longer includes a Table 18-1-B. Instead, Section 1803.5.3 of the CBC describes the criteria for analyzing expansive soils.

Be located on expansive soil creating substantial direct or indirect risks to life or property.

The project would not construct any permanent buildings or structures that would be impacted by the potential for expansive soils in dredge tailings. Therefore, there is ***no impact*** as it relates to expansive soils and this topic is not discussed further.

Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

The project does not include a wastewater disposal system and would not require the use of septic tanks. Therefore, the project has ***no impact*** as it relates to the use of septic or alternative disposal systems and this topic is not discussed further.

Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

The project is located within an area containing surface dredge tailings from previous mining activities and does not contain unique geological features. The dredge tailings at the surface throughout the proposed project area are highly unlikely to uncover significant fossil vertebrate remains given the relatively recent disturbance of mining activities. Therefore, the project would have a ***less than significant*** impact on paleontological features and this topic is not discussed further.

Impacts And Analysis

Impact GEO-1: Would the Project Result in Substantial Soil Erosion or the Loss of Topsoil

Loss of Topsoil

Topsoil handling and reclamation is regulated through SMARA. California Code of Regulations (CCR) Section 3711 outlines proper procedures for topsoil removal, storage and redistribution, including not removing topsoil more than a year in advance of mining, separating and clearly labeling topsoil from other stockpiles, not disturbing topsoil until it is ready for distribution, and redistributing topsoil in a stable area at consistent thickness. Upon reclamation, CCR Section 3705 outlines the requirements for revegetation to prevent erosion and protect topsoil, including using a suitable end use vegetative cover, decompaction of the site, using native plant species (unless exotic species meet end use), planting during the correct season, using soil stabilizing practices and irrigation, and fertilizing in such a way as to not contaminate the water.

No permanent impacts to topsoil would occur in the areas of the conveyor extension. Upon reclamation, topsoil would be maintained in the location of the off-site conveyor

connection. If necessary, compaction would be relieved to establish a suitable root zone in for reclamation plantings.

Since proposed mining areas are dominated by dredge tailing piles, it is not anticipated that salvageable topsoil will be encountered. The topsoil and growth media that would have existed prior to the onset of historic dredge mining and/or industrial operations at the site has long been comingled with these dredge tailings materials. The NRCS soils map (Plate GEO-2) provides an indication of areas that may still contain topsoil sources, to the extent that these areas have not already been disturbed as part of past mining or industrial activity. However, even in areas where NRCS mapping suggests soil may be present, the mine plan is only targeted to grading and removal of sand and gravel from the dredge tailing piles and would not excavate areas with untouched soils. Because of the lack of salvageable topsoil and growth media, extensive revegetation is not planned for areas subject to mining. The end use of undeveloped land will feature relatively flat pads that will be readily adaptable to future uses allowed under the Aerojet SPA. At the completion of mining in each area disturbed by mining operations, prior to leaving each area, the mine operator will apply broadcast seed to each area with the native grass mix specified in the project's Reclamation Plan.

Soil Erosion

Project operations would involve earthmoving activities including excavating and grading. Soil disturbance for extraction of aggregate material would increase the potential for erosion, particularly during the winter rainy season. However, the project applicant is required to comply with the County's Land Grading and Erosion Control Ordinance (Sacramento County Municipal Code Chapter 16.44). Projects that would involve clearing and grubbing more than one acre of land require a grading permit for compliance with the ordinance. For mining projects, the Work Authorization Permit (WAP) takes the place of the grading permit. Plans must show the location, implementation schedule, and maintenance schedule of all erosion control measures and sediment control measures to be implemented or constructed prior to, during, or after the proposed activity (Municipal Code Section 16.44.090). Furthermore, because the proposed project would disturb more than one acre of land, the project applicant may be required by law to either submit a Notice of Non Applicability or prepare a Stormwater Pollution Prevention Plan (SWPPP) and implement site-specific BMPs specifically designed to prevent erosion and downstream sedimentation, and to protect water quality (also see the Hydrology and Water Quality Chapter). The SWPPP and BMPs must be submitted to the Central Valley Regional Water Quality Control Board (RWQCB), in compliance with either the statewide National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order WQ 2022-0057-DWQ, NPDES Permit No. CAS000002), or the Statewide General Permit for Stormwater Discharges Associated with Industrial Activities (Order 2014-0057-DWQ) (Industrial General Permit).

Upon reclamation, undeveloped land will feature relatively flat pads, adaptable to future uses under the Aerojet SPA. At completion of mining in each area, broadcast seed

would be applied to each area to control sediment runoff and dust. Given the highly permeable nature of the dredge tailings substrate, and the fact that the final reclamation grade will leave intact the base of most dredge tailing piles, additional revegetation is not necessary to stabilize the site for erosion control.

Conclusion

By complying with the applicable requirements set forth in Sacramento County Municipal Code Chapter 16.44, the statewide NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order WQ 2022-0057-DWQ, NPDES Permit No. CAS000002), the Statewide General Permit for Stormwater Discharges Associated with Industrial Activities (Order 2014-0057-DWQ) (Industrial General Permit), and SMARA, the project will insure there is not a loss of topsoil through erosion or improper handling; impacts to substantial soil erosion or loss of topsoil are ***less than significant.***

Impact GEO-2: Would the Project Be Located in a Geological Unit or Soil that is Unstable, or That Would Become Unstable as a Result of the Project, and Potentially Result in On- or Off-Site Landslide, Lateral Spreading, Subsidence, Liquefaction or Collapse

Though there is topographical variation on the site, there are no major bluffs or other features that would make the project susceptible to damage related to landslides. None of the soils present on the site, as described in *The Soil Survey of Sacramento County*, California, are listed as unstable, so no impacts related to unstable soils (e.g., landslide, lateral spreading, subsidence, liquefaction, or collapse) would occur.

The project would result in the excavation of existing dredge tailings. The maximum anticipated depth of excavation is 40 feet from top of tailings pile, resulting in a final grade that is relatively level compared to the existing condition. Mining would remove anywhere from a few feet up to a maximum of approximately 40 feet of material from the top of tailing piles. Most excavations would be less than 30 feet in height. Mining is proposed to reclaimed pad elevations that would enable infiltration or positive drainage, as well as avoid creating any depressions or impoundments.

Slopes would be fairly limited given that the reclamation objective is to remove the top of tailings piles to leave relatively flat pads that ensure positive drainage. Reclamation cut slopes would primarily only exist at the interface between dredge tailing piles. No reclamation fill slopes are proposed.

Given the variability of dredge tailings, viability of mining may vary from one row of tailings piles to the next. For example, a pile may contain significant organic debris (tree roots, branches, etc.) or other deleterious materials that are not suitable for aggregate production. Therefore, final finished grades may not be uniformly level across the project site.

Due to the predominantly rounded shape of the gravel, cobbles, and boulders, some sloughing may occur. Based on GeoCon's evaluation of the mine design and test materials from disturbed aggregate on site, the slope stability analysis indicated that, finished mining cut slopes should be no steeper than 1.75H:1V (horizontal: vertical) (see Appendix GS-1 for slope stability calculations). The recommended permissible slope angles would result in slopes that are stable with respect to deep-seated failures and are reflected in the project reclamation plan with which the project must comply.

Final reclamation would leave the site in a more geologically stable condition than the current condition, due to removal of the existing slopes created by the dredge tailings. No reclamation fill slopes are proposed, and reclamation cut slopes would primarily only exist at the interface between dredge tailing piles. Consistent with the conclusions and recommendations of the slope stability evaluation prepared by GeoCon Associates, Inc. (Appendix GS-1), in areas containing reclamation cut slopes, the final slopes would be 1.75H:1V or flatter, consistent with the analysis to demonstrate slope stability. Therefore, the project impacts related to being located in a geological unit or soil that is unstable, or that would become unstable as a result of the project are ***less than significant***.

Mitigation Measures

No mitigation measures recommended.

9 HAZARDS AND HAZARDOUS MATERIALS

Introduction

This chapter addresses the hazardous materials and wastes in the project area and the potential hazardous impacts associated with the proposed White Rock North Mine project (proposed project). The environmental setting in this chapter is based on the available literature and reports relating to past and current uses of the Aerojet property and the ongoing remedial actions by Aerojet. The analysis in this chapter considers the potential impacts relating to exposure or release of hazardous materials and recommends mitigation measures to reduce or eliminate significant impacts as appropriate.

The Notice of Preparation (NOP) for this project was released on November 9, 2022; the Department of Toxic Substances Control (DTSC) submitted comments pertaining to the proposed project being located within the Aerojet-General Corporation Superfund Site (Appendix PD-1). Their recommendations for the proposed project included the following: the project must comply with existing land use restrictions; the project must not impede any cleanup process or interfere with the schedule for implementation of cleanup; the project must not introduce any new contamination; must not spread or exacerbate existing contamination in the soil or groundwater; and prior to any soil disturbance, the area to be disturbed must be defined and assessed as having no evidence of soil contamination that would pose risks to human health or the environment.

Definitions

The term “hazardous substances” refers to both hazardous materials and hazardous wastes. A material is defined as hazardous if it appears on a list of hazardous materials prepared by a Federal, State, or local regulatory agency, or if it has characteristics defined as hazardous by such an agency. A “hazardous material” is defined in the Code of Federal Regulations (CFR) as “a substance or material that is capable of posing an unreasonable risk to health, safety, and property when transported in commerce” (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

> “Hazardous material” means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. “Hazardous materials” include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

The definition of a hazardous waste, as regulated by the California Environmental Protection Agency (Cal EPA), DTSC, is found in the California Health and Safety Code Section 25141(b), as follows:

> "…as hazardous waste because of its quantity, concentration, or physical, chemical, or infectious characteristics: (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; (2) pose a substantial present or potential hazard to human health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bio-accumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of, or otherwise managed."

A hazardous waste is a "solid waste" that exhibits hazardous characteristics. The EPA has defined the term "solid waste" to include the following: any gaseous, liquid, semi-liquid, or solid material that is discarded or has served its intended purpose, unless the material is excluded from regulation. Such materials are considered wastes whether they are discarded, reused, recycled, or reclaimed. The EPA classifies a waste as hazardous if it (1) is listed on the EPA's list of hazardous waste and/or (2) exhibits one or more of the following properties: ignitability (including oxidizers, compressed gases, and extremely flammable liquids and solids), corrosivity (including strong acids and bases), reactivity (including materials that are explosive or generate toxic fumes when exposed to air or water), or toxicity (including materials listed by the EPA as capable of inducing systemic damage in humans or animals).

Environmental Setting

The project area is within the Aerojet campus, south of the American River and U.S. Highway 50. Historically, the project site was mined for gold via dredge mining. Gold dredge mining generally consisted of extracting gold from sand, gravel, and dirt using water and mechanical methods and resulted in dredge tailings. At the project site, dredge tailings from the dredge mining operation created a complex landscape of linear cobble piles up to approximately 40 feet tall, interspersed with ravines and basins. Aerojet (and its subsidiaries) have operated at the project site since 1953. Within the dredge tailing landscapes are remnants from jet-propulsion (rocket) engine testing facilities for Aerojet.

Areas within Aerojet that are regulated for ongoing remediation would not be disturbed by the project. As noted in the Impacts and Analysis Section of this Chapter, and depicted in Plate PD-8, a buffer area is included in the mining plan to avoid disturbance of the portions of the Aerojet campus that remain under regulatory jurisdiction for remedial activities. A complete historical overview of the Aerojet Superfund Site and regulatory background is included as relevant to the CEQA analysis. Majority of the historical overview and superfund site setting is sourced from the Department of Toxic

Substance Control's online EnviroStor database[1] and the State Water Board's online database called GeoTracker[2].

AEROJET-GENERAL CORPORATION SUPERFUND SITE ENVIRONMENTAL SETTING AND BACKGROUND

Historical operations at Aerojet primarily included solid rocket motor manufacturing and testing, liquid rocket engine manufacturing and testing, and chemical manufacturing. In addition, Aerojet also operated two chemical plants, which manufactured various herbicides, pesticides, and pharmaceutical-related compounds. These operations resulted in the release of hazardous substances and materials at limited areas, which have impacted soil and groundwater. The most prevalent chemicals encountered to date included trichloroethene (TCE), perchlorate, and N-nitrosodimethylamine (NDMA). (Aerojet General Corporation, 2008)

In determining the extent of hazardous chemicals and identifying appropriate remediation and removal actions, investigations focus on the substances and chemicals that are potentially hazardous to human health, known as chemicals of potential concern (COPC) and chemicals of potential ecological concern (COPEC). The EPA defines COPC to include chemicals that are persistent, bioaccumulate, are toxic and / or are carcinogenic (chemicals that cause cancer).

Investigations also consider volatile organic compounds (VOC). The EPA identifies VOC as typically industrial solvents or as a by-product (e.g., chloroform), and emitted as gases from certain solids or liquids (VOCs readily transform into vapor at lower temperatures). VOCs may be in groundwater or dispersed in the air. Semi-volatile organic compounds (SVOC) are more likely to be liquid or solid at lower temperatures, such as pesticides or oil-based products.

AEROJET POINT SOURCES AND OPERATING UNITS

As a result of the enactment of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) in 1980, the Aerojet site was added to the National Priorities List (NPL) in 1983. By 1989, a Partial Consent Decree (PCD) was established that outlined the procedures and the obligations towards cleanup of the Aerojet Superfund Site. The Superfund site is grouped into Operable Units (OUs) for the purpose of investigations and remediation. The sections that follow describe the nature

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[1] McDonnell-Douglas -Inactive Test Site (34380069)
https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=34370069
Aerojet General Corporation (24370002)
https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=34370002

[2] Aerojet Site-Wide (Post 2010) (SL185992958)
https://geotracker.waterboards.ca.gov/profile_report?global_id=SL185992958
McDonnell Douglas/Aerojet Inactive (SL205493018)
https://geotracker.waterboards.ca.gov/profile_report?global_id=SL205493018

of contamination by the appropriate regulatory organization or label. For more information about the relevant regulations, see the Regulatory Section below.

The Aerojet Superfund Site was originally divided into Zones (Zones 1-4) to facilitate completion of the Sitewide Remedial Investigation / Feasibility Study (RI/FS). The requirement and purpose of the RI/FS is provided in the Regulatory Setting below. In 2002, the PCD was modified to allow for the completion of the RI/FS through an OU approach. The initial OUs included OU-1 through OU-5. By 2004, Aerojet prepared a Program Plan Modification Report that grouped additional potential source areas into four additional OUs: OU-6 through OU-9. These four OUs cover 293 potential source areas[3].

In 2005, Aerojet presented an RI/FS work plan that addressed the general approaches that will be used while conducting RI/FS for over 300 potential source areas within six of the nine OUs located throughout the Aerojet Superfund Site, including the Island OU, Eastern OU, and Central OU. The RI/FS work plan documented the decisions and evaluations made during the scoping process and presented the anticipated tasks for the RI/FS for source areas OUs within the Aerojet Superfund Site. The RI/FS process is dynamic, such that new information and refined project objectives will likely be identified as the RI/FS progresses (Aerojet General Corporation, 2007).

Plate PD-4 shows that the proposed project (mining site) will be adjacent to OU-5 (Perimeter Groundwater), and will be located within portions of OU-7 (Island OU), OU-8 (Eastern OU), and OU-9 (Central OU).

Table HAZ-1 summarizes the known potential contaminants of concern, the potential media affected and the activities for each of the relevant OUs, which are discussed in further detail below (DTSC, 2025).

[3] Aerojet General Corporation. 2008. *Final Supplemental Remedial Investigation / Feasibility Study Field Sampling Plan for Eastern Operable Unit (Operable Unit 8) Aerojet Superfund Site. Aerojet Document Control Number: SR10124132*. https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=34370002

Table HAZ-1:Operable Units (OU) in the Project Site

	OU-5 Perimeter Groundwater[1]	OU-7 (Island OU)[2]	OU-8 (Eastern OU)[3]	OU-9 (Central OU)[4]
Potential Contamination of Concern	Dioxin (As 2, 3, 7, 8-TCCD TEQ) N-Nitrosodimethylamine Inorganic Contaminants Metals Perchlorate Perfluorooctanoic Acid (PFOA) Polychlorinated biphenyls (PCBS) Polynuclear Aromatic Hydrocarbons (PAHS) VOCs	Under Investigation. Risk Assessment and Sampling in Progress.	Under Investigation. Risk Assessment Workplan in Progress	Under Investigation
Potential Media Affected	Aquifer used for drinking water supply affected, other groundwater affected (uses other than drinking water), sediments, soil, soil vapor, and surface water affected.	Aquifer used for drinking water supply affected, sediments, soil, and surface water affected.	Aquifer used for drinking water supply affected, sediments, and soil.	Aquifer used for drinking water supply affected, sediments, and soil
Current Status / Activities	Ongoing Monitoring and Land Use Restriction Monitoring Monthly progress reports pursuant to Paragraph 87 of the UAO No. 9-2011-16 (Groundwater) and Paragraph 85 of the UAO No. 9-2011-17 (Soil Sites).	Site Characterization Report expected 2026 Feasibility Study Report expected 2028	RI/FS Sampling and Analysis Plan (SAP) expected 2026 and SAP RI Fieldwork to begin 2026/2027. Remedial Investigation Report expected 2028 Feasibility Study Report expected 2030.	Groundwater monitoring of TCEs. Draft RI/FS SAP completed. SAP RI Fieldwork to begin 2028. Remedial Investigation / Feasibility Study Reports expected 2032.

Notes:

1. *Area OU-5 Perimeter Groundwater Summary*
   https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=34370002&ou_id=1000054&hideside=True&printerfriendly=True
2. *2 Area OU-7 Island Summary*
   https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=34370002&ou_id=1000059&hideside=True&printerfriendly=True
3. *3 Area OU-8 Eastern Summary*
   https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=34370002&ou_id=1000060&hideside=True&printerfriendly=True
4. *4 Area OU-9 Central Summary*
   https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=34370002&ou_id=1000061&hideside=True&printerfriendly=True

Perimeter Groundwater Operable Unit (OU-5)

The Perimeter Groundwater Operable Unit (OU-5) is under remedial operations, including active monitoring wells, extraction wells, and groundwater extraction treatment systems (GET). The project area is near GET A and GET B[4]. OU-5 Perimeter Groundwater includes all plumes of chemicals in groundwater at, and beyond, the Aerojet Superfund Site that are not addressed in OU-3, OU-4, or the remedial program under CalEPA, DTSC Order No. I&/SE93/93-016 and RWQCB, Central Valley Region Cleanup and Abatement Order 97-093. Additionally, OU-5 Perimeter Groundwater also contains potential source areas (13 areas) that are located on the northern perimeter of the Aerojet Superfund Site (Aerojet-General Corporation, 2008).

Island Operable Unit (OU-7)

The Island OU is located primarily in the central portion of the Aerojet Superfund facility and was developed to address areas assumed to have residual product and chemicals acting as a continuing source. The Island OU contains 66 potential source areas, 10 RCRA units, 24 septic tanks and one transformer associated with the identified source areas (Aerojet General Corporation, 2007).

The industrial activities within the Island OU that may be potential sources included manufacturing and disposal. The manufacturing of solid rocket propulsion systems consisted of inert parts fabrication / preparation, propellant processing, motor casting, final assembly and hogout[5]. Disposal of materials included burn areas, landfills, and septage lagoons.

Previous investigations of the Island OU reported that VOCs, SVOCs, metals, dioxins and furans, perchlorate, and NDMA were detected in environmental media at concentrations above current screening levels.

OU-7 consists of various sites / areas that are not contiguous in location; two sites – Hogout Area and Thermal Treatment Area – are within the proposed project boundaries and are further discussed below.

OU-7 Hogout Area [50F-51F-57F]

Hogout Area: This area consisted of Solid Rocket Manufacturing Operations, mainly propellant removal, which included rehabilitation of certain rocket motors for recasting with new propellant, removal of cured propellant, and motor parts cleaning. Cured propellant was extracted using high-pressure water. Wastewater tanks, treatment

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[4] U.S. Environmental Protection Agency, Region 9, 15 Feb. 2011. *Interim Record of Decision for Groundwater and Final Record of Decision for Soil for the Perimeter Groundwater Operable Unit OU-5 Aerojet Superfund Site, Rancho Cordova, California*. https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F7663410782%2FOU5ROD%20Feb%2015%20Final.pdf

[5] The term hogout pertains to propellant removal.

systems, and impoundments were used for chemical treatment and collection of the runoff. Hogged-out propellant, explosive material and propellant / solvent contaminated wastes were stored in fiber drums, boxes and cartons prior to desensitization. Solvents were historically used for the final wash down of the motor casings. Chemicals associated with the operations include TCE, TDI, dichloromethane, fuels, and caustic sodas (Aerojet General Corporation, 2007).

Groundwater: In prior investigations, COPCs identified in groundwater included VOCs, metals, and perchlorate. VOC concentrations (indicative of residual product) are present approximately 100 feet below ground surface.

Soil Vapor: VOCs were identified as COPCs in soil vapor and data indicated that VOCs in shallow soils extend up to 350 feet beyond source area boundaries, but do not appear to coincide with residual product in shallow groundwater.

Soil: COPCs identified in soil include VOCs, SVOCs, and metals. No SVOCs were detected in soil. COPCs in soil extend beyond the source areas only where waste was discharged to slicken areas (Aerojet General Corporation, 2007).

OU-7 THERMAL TREATMENT AREA [11G]

Thermal Treatment Area: This area consisted of Disposal Materials and was operated from 1978 to 1999. Industrial activities included thermal treatment / open burning of recovered rocket propellant from the Minuteman Hogout facility, perchlorate contaminated solvents and still bottoms, propellants and explosives plus wastes contaminated with these materials, oxidizers, and oxidizer-contaminated waste, pyrotechnics, high-hazard wastes, and other waste materials. Prior to 1979 (before concrete pads were constructed), materials were burned in open trenches and pits at various locations within the Thermal Treatment Area [from page 2-6 and 2-7 (57) 02 Final Island OU].

Groundwater: COPCs identified in groundwater included VOCs, metals, NDMA, and perchlorate in groundwater extend up to 1,800 feet beyond the source area and are part of a regional plume in shallow groundwater.

Soil Vapor: VOCs were identified as COPCs in soil vapor and data indicate that VOCs in shallow soils do not extend beyond the source area.

Soil: COPCs identified in soil include VOCs, SVOC, metals, NDMA, perchlorate, TPH, and dioxins and furans. COPCs in soil do not extend beyond the source areas.

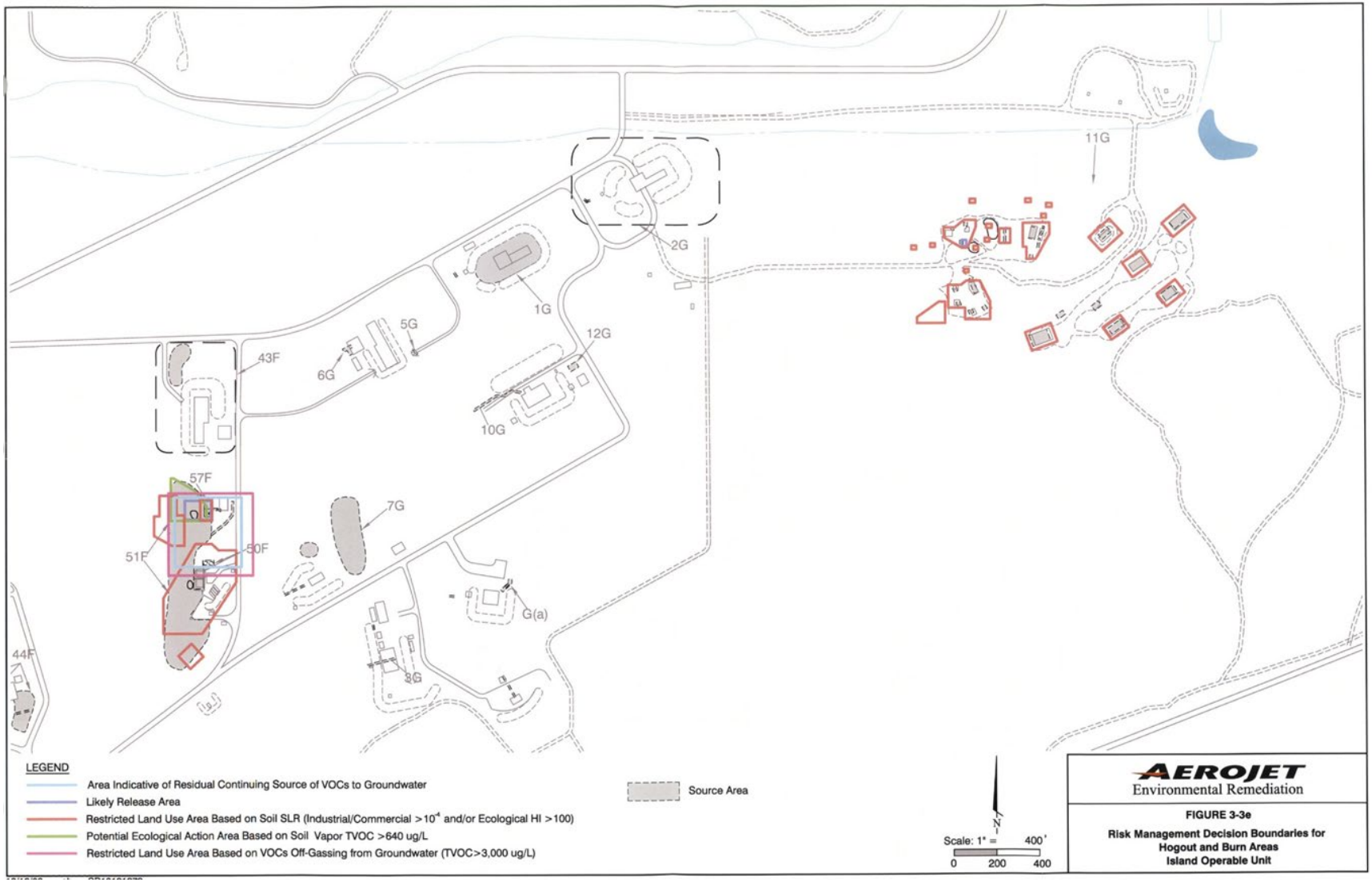
ISLAND OU RI/FS

Aerojet completed (July 2007) a RI/FS Field Sampling Plan (FSP) for the Island OU (OU-7). The purpose of the FPS was to present Aerojet's fieldwork approach for Island OU source areas by defining in detail the sampling information and data quality objectives for the Island OU source areas. This document provides the various investigations, dissolved-phase groundwater investigations, perchlorate investigations,

soil investigations, surface water and sediment investigations, and ambient air investigations.

The investigation approach for the RI was to (1) identify areas requiring remedial action, (2) refine the extent of those areas with chemical concentrations above the risk management range in order to more accurately evaluate remedial alternatives, and (3) focus the majority of sampling to those areas with chemical concentrations within the risk management range. Through this work, risk management decision boundaries were developed from risk management observations. Plate HAZ-1 shows the risk management boundaries for the Hogout and Thermal Treatment areas. The boundaries are designated as: areas indicative of residual continuing source of VOCs to groundwater, likely release areas, restricted land use areas based on soil concentrations exceeding industrial / commercial or ecological screening levels, potential ecological action areas based on soil vapor exceeding ecological screening levels, and restricted land use areas based on VOCs from the vadose zone and off-gassing from shallow groundwater.

Plate HAZ-1: Island OU (OU-7) Hogout and Thermal Risk Management Decision Boundaries



BASELINE ECOLOGICAL RISK ASSESSMENT (BERA) WORK PLAN

A Baseline Ecological Risk Assessment (BERA) Work Plan was completed and approved in 2013 by the US EPA Region 9, the DTSC, and the RWQCB. A final Sampling and Analysis Plan (SAP) that focused on supplementing the BERA Work Plan was completed in 2021. This SAP is intended to more accurately quantify hazards to ecological receptors potentially exposed to chemicals that have been identified as COPECs and to provide site specific information that may be used to refine exposure and/or toxicity for similar COPECs at other management areas outside of the Island OU (Aerojet Rocketdyne, 2021). As of December 2022, the BERA fieldwork has been completed. Future activities for OU-7 include additional data gap sampling after preparation of an Island OU Data Gap SAP, and completion of a Site Characterization Report and Feasibility Study Report (Envirostor, 2025b)

EASTERN OPERABLE UNIT (OU-8)

The Eastern OU (OU-8) is located in the eastern portion of the Aerojet facility and contains 91 potential source areas. Almost half of the total proposed project area encompasses the Eastern OU. The boundaries of the Easten OU were developed to address the areas used primarily for solid rock testing and liquid rocket engine testing. Solid rocket testing consisted of propellant and motor performance testing, component testing, vibration testing, structural testing, instrumentation testing, and inspection and disassembly. Chemicals associated with these activities include oils, solvents, and freon, as well as hydraulic oils (potentially containing PCBs), kerosene, antifreeze, and solvents (Aerojet General Corporation, 2008).

Liquid rocket testing consisted of component testing, engine testing, cleaning, fuel and oxidizer materials unloading and storage, fuel mixing, metal pickling, and chemical and wastewater collection and treatment. Chemicals used included liquid oxygen, kerosene, nitrogen tetroxide, and Aerozine 50 (hydrazine and unsymmetrical dimethylhydrazine). Following testing, engines were cleaned at test stands or in a test bay using solvents and water to flush remaining fuel and oxidizer from the engine. The wastewater was collected in sumps. Kerosene may have been skimmed or burned from the surface of the sumps and discharged to a waste tank. Wastewater containing residual hydrazine and nitrogen tetroxide was neutralized with caustic soda (sodium hydroxide), hydrogen peroxide, and copper sulfate prior to disposal. Limestone was used as a filtering medium for fluorinated liquids. Byproducts of liquid rocket engine testing include SVOCs, NDMA, nitric acid, metals (when aniline and fuming nitric acid are present), dioxins, and furans (Aerojet General Corporation, 2008).

To date, a Final RI/FS SAP for OU-8 (Eastern OU) was completed in 2009 and the initial SAP RI fieldwork was completed in 2009. A data gap investigation is planned; however, the SAP Addendum to complete the RI fieldwork is not scheduled to be completed until 2027 (DTSC, 2025c). White Papers addressing Ecological Risk[6] (CB&I

[6] CB&I Environmental & Infrastructure, Inc. 2015. *White Paper – Ecological Risk Assessment, Aerojet Superfund Site, Sacramento County, California.*

Environmental and Infrastructure, 2015) and Human Health Risk Assessment[7] (Aerojet, 2012) were completed by Aerojet. Future activities for OU-8 include completion of a RI/FS for remediation (approximate due date 2029), followed by a Record of Decision (ROD) (DTSC, 2025b). The ROD is the last action, which identifies the remedies for cleanup.

Central Operable Unit (OU-9)

The Central Operable Unit (OU-9) is centrally located within the Aerojet Superfund Site and almost half of the proposed project is located within OU-9. The conveyor will be at the edge of the boundary of the Superfund Site, extending south of Old White Rock Road to White Rock Road, about halfway between Nimbus Road and Grant Line Road connections with White Rock Road. Refer to Plate PD-3. Within OU-9, and within the boundaries of the project site, is an area called the Central Disposal Area (CDA). The CDA is a RI/FS management area and now includes groundwater monitoring wells that are subject to annual reporting. This annual monitoring program is a result of modifications to the PCD (in 2002).

TCE concentrations have been decreasing in many CDA monitoring wells for the past several years, while other CDA monitoring wells sampled did not have detections of TCE or TCE concentrations were less than the MCL (Geosyntec Consultants, 2024).

Regulatory Setting

Federal

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly referred to as Superfund, was enacted in 1980. This act created a tax on chemical and petroleum industries to create a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, liability of those responsible for release of hazardous waste at those sites and established a trust fund for cleanup if no responsible party could be identified. The law established two types of response actions – short-term removal and long-term remedial actions. In

https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F7883314371%2F2015Jan_Rev%20Eco%20Risk%20White%20Paper.pdf

[7] Aerojet a GenCorp Company. 2012. *White Paper – Human Health Risk Assessment Aerojet Superfund Site.* https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F5619796574%2F2012%20HHRA%20White%20Paper_Final.pdf

conjunction with CERCLA is the National Contingency Plan (NCP) and the National Priorities List (NPL).

The NPL is a list of sites that are national priority among known releases of hazardous substances and the NPL is intended to guide the EPA in determining which sites warrant further investigation, and more importantly, notifying or informing the public of these sites. A site must be on the NPL for long-term remedial actions. The NPL is also a management and information tool to guide long-term remedial response actions. The Aerojet-General Corporation Superfund Site has been on the NPL since 1983.

In 1986, CERCLA was amended to the Superfund Amendments and Reauthorization Act (SARA), which included updates and changes such as: permanent remedies and treatment technologies for cleanup hazardous waste sites, new enforcement and settlement tools, increase State involvement in the Superfund program, focus on human health problems posed by hazardous waste sites and encourage more citizen participation in making decisions on how a site is cleaned up. Enforcement activities related to the Superfund Division at EPA is overseen by the Office of Site Remediation Enforcement (OSRE), a division of the EPA Office of Enforcement and Compliance Assurance.

Resource Conservation and Recovery Act (RCRA)

The federal government adopted laws for the management of hazardous waste facilities generally known as the Resource Conservation and Recovery Act (RCRA). The RCRA requires any business, institution, or other entity generating hazardous waste to identify and track such waste from its generation until it is recycled, reused, or disposed. This is known as the “Cradle-to-Grave” system. The RCRA, subsequently amended in 1984 by the Hazardous and Solid Waste Act, extended the “Cradle-to-Grave” tracking system to hazardous substances, specifically prohibiting certain techniques for disposal of specified hazardous substances. RCRA has also established the framework for states to implement municipal solid waste and non-hazardous secondary material management programs, and states may set more stringent requirements than federal regulations.

Aerojet maintains a RCRA permit, which provides requirements for closure of RCRA units, some of which are encompassed by CERCLA source areas.

State

Hazardous Waste Control Act (HWCA)

The EPA was given primary responsibility for implementation of the RCRA. Individual states may implement their own hazardous substance management programs, if approved by the EPA, with regulations at least as strict as the RCRA. In August 1992, the Cal EPA received authorization to implement California’s RCRA program, called the Hazardous Waste Control Act (HWCA). The HWCA and associated regulations are similar to RCRA but have a broader definition of “hazardous material”, and as a consequence, regulate more chemicals. Cal EPA established the DTSC as the agency

responsible for the implementation of the HWCA. The DTSC has the authority to delegate enforcement responsibility to local jurisdictions that enter into an agreement with the State agency for the generation, transport and disposal of hazardous substances under HWCA.

Hazardous Waste Management and Site Cleanup – California Code of Regulations

California regulations governing hazardous materials are as stringent as (and in some cases, more stringent than) federal regulations. The state has been granted primacy (primary responsibility for oversight) by the EPA to administer and enforce hazardous waste management programs. State regulations also have detailed planning and management requirements to ensure that hazardous materials are handled, stored, and disposed of properly to reduce human health risks.

California regulations pertaining to hazardous waste management are published in the California Code of Regulations (CCR). The CCR is updated annually and incorporates all legislation and final regulations enacted during the year, as well as specifying the agencies responsible for enforcing the various regulations.

Department of Toxic Substances Control (DTSC)

Title 22 of the CCR gives the California DTSC responsibility for regulating hazardous waste management at the state level. The DTSC regulates the treatment, storage, and disposal of hazardous waste in accordance with Title 22 of the CCR and the RCRA. The DTSC administers the state and federal Superfunds for cleanup of major hazardous waste contamination sites.

Regional Water Quality Control Board (RWQCB)

Title 23 of the CCR charges the nine Regional Water Quality Control Boards (RWQCB) with responsibility for overseeing water quality control. The RWQCBs are responsible for protecting actual or potential beneficial uses of water, including municipal, industrial, and agricultural water supplies and recreation. Each RWQCB has authority to supervise hazardous waste cleanup at sites referred by local agencies and in cases where water quality is affected or threatened. Either the DTSC or the RWQCB may be responsible for the cleanup of sites of significant contamination by hazardous waste. The two agencies often work together to ensure that their requirements are consistent and are implemented as intended.

California Occupational Safety and Health Administration (Cal-OSHA)

Health and safety regulations applying to the investigation and cleanup of sites contaminated with hazardous waste are enforced by Cal-OSHA under Title 8 of the CCR and the adopted federal regulations (29 CFR 1910).

"Cortese List" – Government Code Section 65962.5

Government Code Section 65962.5 requires the CalEPA to develop and maintain what is known as the "Cortese List", a list of all hazardous waste facilities. This list is a multi-

agency effort and the various agencies oversee clean-up efforts, permitting, enforcement, and investigations related to hazardous waste. The DTSC oversees enforcement and investigation efforts at hazardous waste facilities and at sites known, or suspected, to have contamination issues. The Department of Health Services oversees all public drinking water wells that contain detectable levels of organic contaminants. The State Water Resources Control Board (State Water Board) tracks all unauthorized releases of underground storage tanks and solid waste disposal facilities where there has been a migration of hazardous waste. The Cortese List is available to the public and the DTSC and State Water Board maintain a database of all open and closed sites.

DTSC's Site Mitigation and Restoration Program is responsible for overseeing the evaluation and cleanup efforts of contaminated properties throughout California. This oversight includes, but is not limited to, brownfields and voluntary agreements, State Superfund Sites, Military Facilities and tiered permitted facilities.

Aerojet Superfund Site – Partial Consent Decree (PCD) and Remediation

By 1989, Aerojet, the EPA, and California DTSC and the California Central Valley Regional Water Quality Control Board (Central Valley RWQCB) entered into a Partial Consent Decree (PCD). The objective of the PCD was to establish procedures and obligations toward achieving the goals of Superfund – protect human health and the environment by cleaning up sites, involve communities in the process and return Superfund sites to end productive uses. The EPA, DTSC and Central Valley RWQCB are the lead agencies providing oversight for the Aerojet Superfund Site.

The PCD established provisions for addressing potentially contaminated drinking water supply wells and the American River, and operation of ground water extraction / treatment facilities. These treatment facilities are intended to intercept the off-site migration of plumes of chemicals within the ground water near or within the Aerojet site and extract and treat the ground water.

The Superfund site is grouped into OUs for the purpose of investigations and remediation. Site specific information for each relevant OU is described in further detail under the environmental setting section above.

Remedial Investigation / Feasibility Studies (RI/FS)

The PCD also requires Aerojet to complete RI/FS for the entire Superfund sites. The purpose of an RI/FS is:

1. Determine the nature and extent of contamination.

2. Assess the risk to public health and the environment due to the release, or threat of release, of hazardous substances.

3. Evaluate remedial alternatives and develop a cleanup strategy to eliminate the identified potential impacts.

The PCD outlined the procedures for completion of the required Sitewide RI/FS; the Sitewide RI/FS was to be conducted in three phases: Scoping Phase, Phase I RI/FS, and Phase II RI/FS. The Sitewide preliminary characterization (Scoping Phase) was completed in the 1990s. In 2002, the PCD was modified to establish an OU based program.

The PCD also includes restrictions on the use and transfer of land (found in 11(B) through 11(N)). These areas are identified in Plate HAZ-2. A subset of this area has additional restrictions as defined in the PCD, as such as: Aerojet shall first give notice and obtain approval from the California Department of Health Services (or its successor agency, which is now Agency for Toxic Disease and Substance Control (ATSDR)) for any new uses, or any construction requiring excavation, grading or removal of more than 10 cubic yards of soil, as shown in Plate HAZ-3. Aerojet shall not grant any possessory interest in the land without first giving notice to the California Attorney General and the United States and said grant must include a covenant that the grantee and any successor shall comply with the restrictions of the PCD.

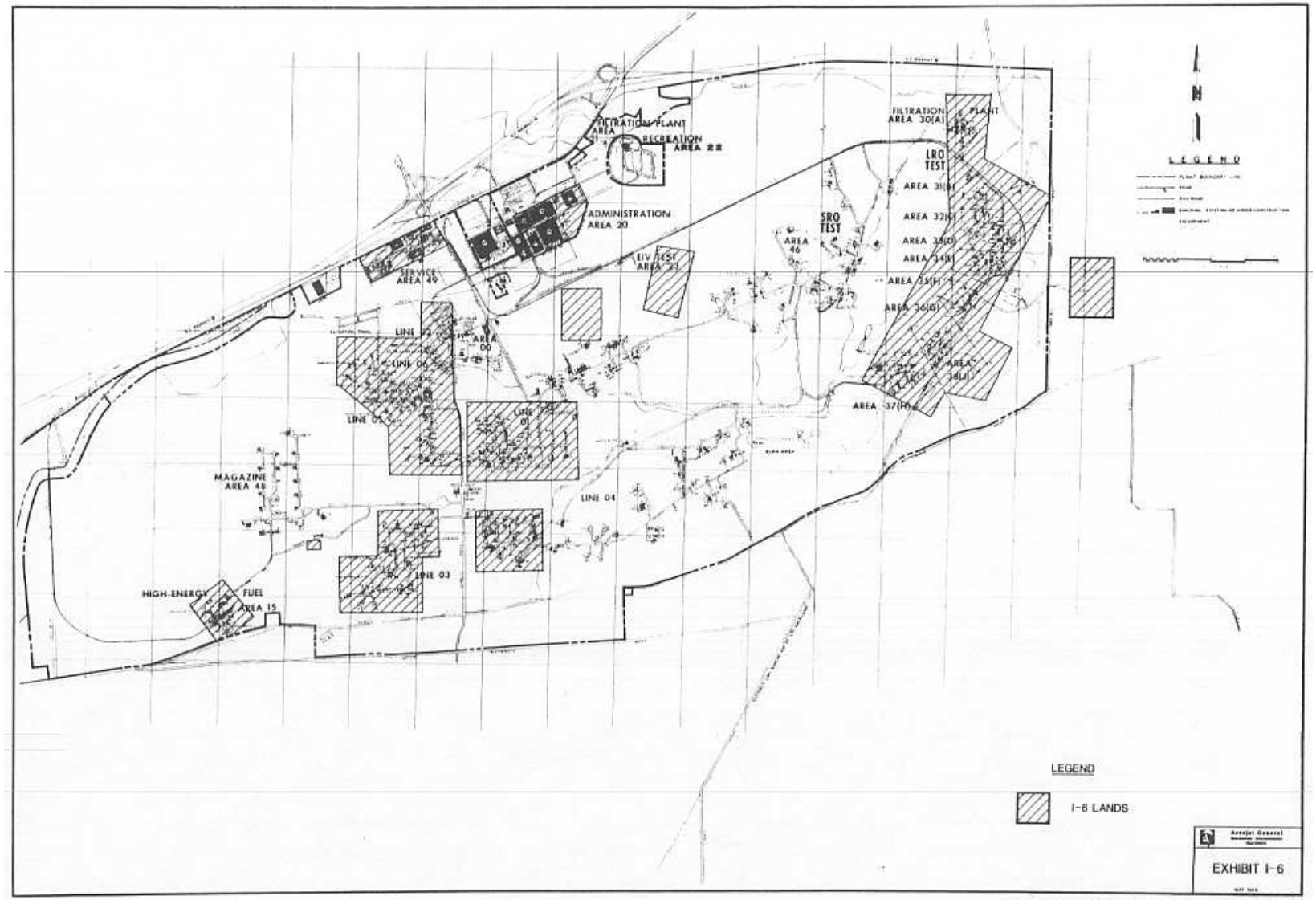
IMMINENT AND SUBSTANTIAL ENDANGERMENT AND REMEDIAL ACTION ORDER

Pursuant to the Health and Safety Code Section 25358.3, the DTSC with the CalEPA, issued an Imminent and/or Substantial Endangerment Determination and Consent Order (Order) in June 1994[8], identifying McDonnell Douglas Aerospace and Aerojet General Corporation as responsible parties. This Order was issued because the departments determined that there may be an imminent or substantial endangerment to the public health or welfare or to the environment because of a release or threatened release of a hazardous substance. Objectives of the Order include implementation of appropriate removal actions, completion of RI/FS, and preparations of Remedial Action Plans (RAP). The Order will also facilitate future use of the site.

The Order identified the substances found at the site based on historical and current (as of 1994) site characterization, noting that site characterization focused primarily on groundwater contamination and that soil characterization was preliminary and contaminant data was limited. Chemicals above maximum contamination levels were detected for many chemicals within soil and groundwater. Some of the chemicals detected included arsenic, benzene, trichloroethylene, and chromium VI, which are all identified as human carcinogens per the EPA's Integrated Risk Information System (IRIS) database. The chemicals beryllium, cadmium, chloroform, dichloromethane (methylene chloride), lead, and polychlorinated biphenyl's (PCBs) are all identified as probable human carcinogens per EPA's IRIS database.

[8] Department of Toxic Substances Control (DTSC). 1994. *Imminent and/or Substantial Endangerment Determination and Consent Order. Docket No. I&/SE93/94-016 In the Matter of McDonnell Douglas/Aerojet Inactive Rancho Cordova Test Site*. https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F2193592667%2Fircts.pdf

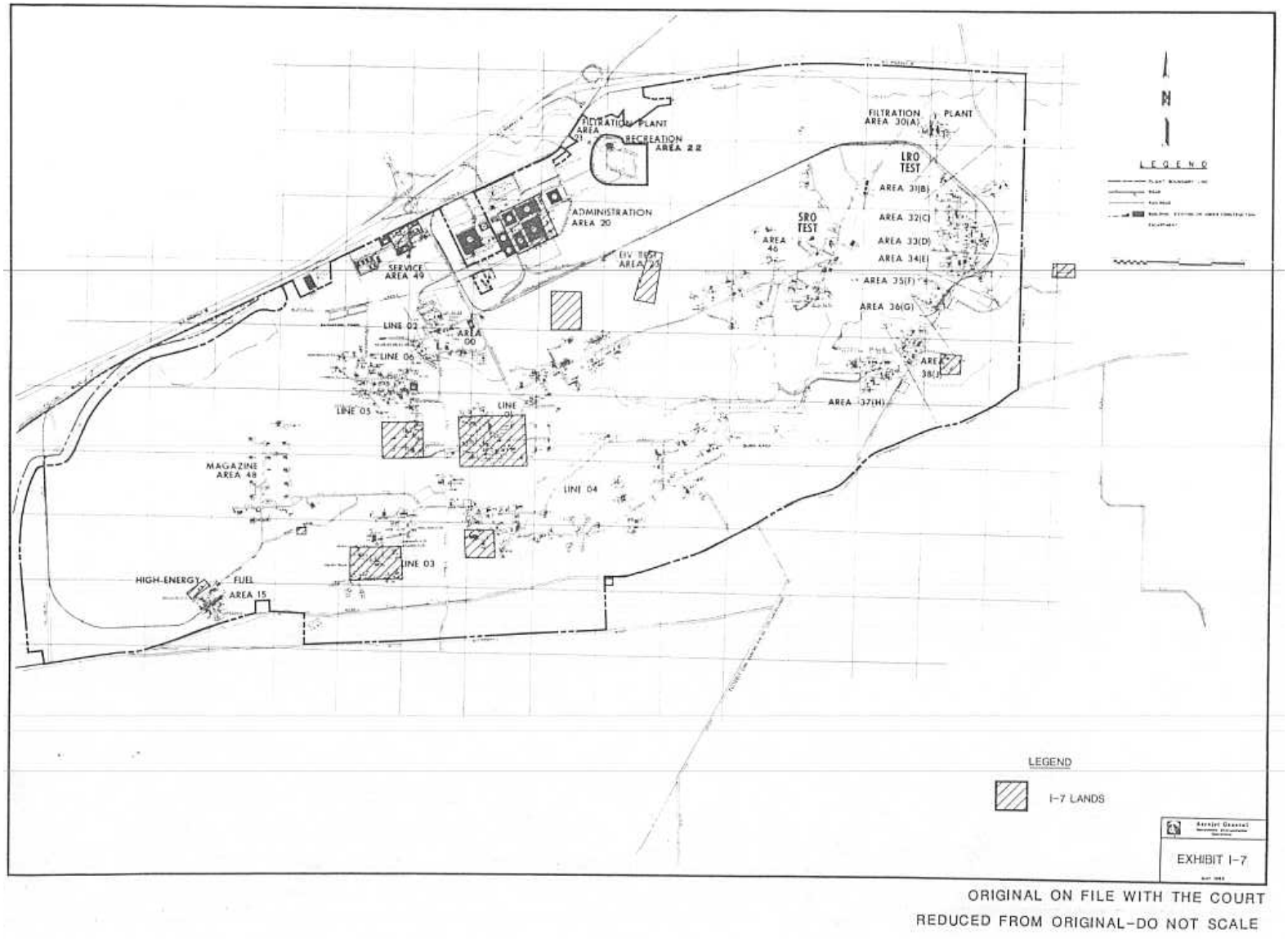
Plate HAZ-2: Exhibit I-6 from Partial Consent Decree



ORIGINAL ON FILE WITH THE COURT

REDUCED FROM ORIGINAL–DO NOT SCALE

Plate HAZ-3: Exhibit I-7 from Partial Consent Decree



The Order, as an endangerment determination, noted that the contamination can have public health and ecological risks. Public health risks include soil contamination having the potential to become a source of ambient air, surface water, and/or groundwater contamination, and that long term human exposure to contaminated soil, surface water, and groundwater may increase the risk of adverse health effects. The routes of exposure were identified to include: soil ingestion, dermal contact with exposed soil, inhalation of volatilized chemicals from exposed soil and contaminated soil particles and ingestion of contaminated groundwater. Furthermore, soil contamination can have environmental or ecological risks, such as contaminated surface waters impacting wetlands and vernal pools, and the bioaccumulation effect of dioxin may pose a risk to sensitive species (DTSC, 1994).

THE ORDER SUPPLEMENTS THE PCD IN THAT SIMILAR TO THE PCD, THE ORDER IDENTIFIES THE RESPONSIBLE PARTIES (AEROJET AND MCDONNELL DOUGLAS), REQUIRES INVESTIGATIONS AND ESTABLISHES REMEDIATION, BOTH WITH A GOAL OF PROTECTING HUMAN HEALTH AND THE ENVIRONMENT FROM THE RELEASE OF CHEMICALSRECORD OF DECISION AND UNILATERAL ADMINISTRATIVE ORDERS

A Record of Decision (ROD) is the last action of a Superfund site. The ROD identifies remedies for cleanup, based on the RI/FS. The Perimeter Groundwater OU (OU-5) is the only OU in the project area that has a ROD. The Perimeter Groundwater OU-5 ROD, issued February 15, 2011, specifies that Aerojet is responsible for conducting the remedial operations that were selected for groundwater and select soil sites. Furthermore, the requirement of Aerojet to implement the selected remedies is included in the Unilateral Administrative Order (UAO) No. 9-2011-16 (Groundwater) and UAO No. 9-2011-17 (Soil Component). More specifically, pursuant to Paragraph 87 of UAO No. 9-2011-16 and Paragraph 85 of UAO No 9-2011-17, Aerojet must submit monthly progress reports for these groundwater and soil sites of OU-5.

Underground Storage Tanks

The State of California State Water Board has many programs related to water quality. The State Water Board oversees the Underground Storage Tank (UST) and Cleanup programs. Leaking USTs can result in petroleum contaminating groundwater, which poses threats to health, safety and the environment. Risks include exposure to contaminated soil and/or groundwater, contaminated drinking water aquifers and wells, and inhalation of petroleum vapors (State Water Resources Control Board, 2024).

Local

Sacramento County General Plan

Under California law, cities and counties must adopt a comprehensive, long-term general plan for physical development related to their planning boundaries. The Sacramento County General Plan (General Plan) was adopted November 9, 2011, with a planning horizon to 2030. The General Plan serves as the principal land use planning and policy document for Sacramento County and establishes broad goals, objectives and policies that guide county-wide land use. The following are the most pertinent General Plan policies related to hazardous materials that pertain to the project. Any

potential environmental impacts related to these policies will be discussed in the Impacts and Analysis section below.

HM-4: The handling, storage, and transport of hazardous materials shall be conducted in a manner so as not to compromise public health and safety standards.

HM-7: Encourage the implementation of workplace safety programs and to the best extent possible ensure that residents who live adjacent to industrial or commercial facilities are protected from accidents and the mishandling of hazardous materials.

HM-9: Continue the effort to prevent surface water contamination.

HM-10: Reduce the occurrences of hazardous material accidents and the subsequent need for incident response by developing and implementing effective prevention strategies.

Aerojet Special Planning Area (SPA)

The project is located on Aerojet owned property and is governed by the Aerojet Special Planning Area (SPA) (Section 508-300 of Zoning Code, amended January 2021), which is an ordinance that regulates land use and development of approximately 12,000 acres of land owned by Aerojet. The project site is within the Industrial Zone of the SPA. The SPA also addresses a landfill, known as the Aerojet Waste Consolidation Unit (AWCU). The parcel identification of the AWCU is APN: 072-0100-020-0000, which is located generally northwest of the Grant Line Road and White Rock Road intersection and is located outside the boundaries of the proposed mining project. Although the AWCU site is not within the project limits, the AWCU service area and associated haul routes traverse through the project area. The AWCU has been conditioned to be capped and closed in accordance with CCR Title 27 requirements by the end of 2035.

In 2006, an agreement between the County of Sacramento and Aerojet was signed that confirms that surface mining qualifies as a permitted “existing use” under the Aerojet SPA and that the County may condition and regulate surface mining on the Aerojet SPA property, but, as a permitted use, may not deny the right to engage in such activity. The agreement further outlines performance standards, such as SPA Implementation Permits, submittal and approval of mining and reclamation plans, and issuance of Work Authorization Permits.

Environmental Management Department

The Sacramento County Environmental Management Department (EMD) has been designated by the CalEPA as the Certified Unified Program Agency (CUPA) for Sacramento County. As the CUPA, EMD is responsible for enforcing and implementing six statewide environmental programs, both in the incorporated cities and unincorporated areas of the County. These programs include: underground storage of hazardous substances (USTs); Hazardous Materials Business Plan (HMP); Hazardous

waste generator requirements; California accidental release prevention (Cal-ARP); Uniform fire code hazardous materials management; and above ground petroleum storage. EMD regulates the use, storage and disposal of hazardous materials in Sacramento County by issuing permits, monitoring regulatory compliance, investigating complaints, and other enforcement activities. The EMD also oversees remediation of certain contaminated sites resulting from leaking USTs.

SACRAMENTO COUNTY EVACUATION PLAN

The Sacramento County Emergency Operations Plan[9] (2022) addresses the County's planned response to extraordinary emergency situations (natural or human-caused disasters). The Emergency Operations Plan establishes the Emergency Management Organization required to mitigate an emergency disaster, identifies roles and responsibilities to protect health and safety of County residents, and establishes the operational concepts associated with both field responses and the County's Emergency Operation Center activities, and finally, the recovery process. Focus areas within this evacuation plan include public alert and warning, transportation, and care and shelter (Sacramento County OES, 2021).

As a supplement to the Emergency Operations Plan, Sacramento County has a Sacramento Operational Area Evacuation Functional Annex plan (August 2021[10]), which provides strategies and procedures to document the agreed upon strategy for the Operational Area's (Operational Area is defined as an intermediate level of the state emergency services organization, consisting of county and all political subdivisions within the county area) response to emergencies that involve the mass evacuation of persons from an impacted area to a safe area.

Evacuation zones have been programmed for the County and are divided into eight districts, which align with the Sacramento County Sheriff patrol districts. Local jurisdictions work with the County, and especially the Operation's Section, Law Enforcement Branch and the Evacuation Movement Unit to identify and update evacuation routes and evacuation transfer points. The primary evacuation routes will usually be major interstates and other highways, and major roadways within and out of the County – unless otherwise determined by the County DOT. During an evacuation, County DOT traffic engineers calculate traffic flow capacity and decide which of the available traffic routes should be used to move people in the correct directions.

[9] Sacramento County Office of Emergency Services. May 2022. *Emergency Operations Plan*. https://sacoes.saccounty.gov/content/dam/oes/docs/transition/emergency-operations-plan-2022.pdf

[10] Sacramento County Office of Emergency Services. August 2021. *Evacuation Functional Annex*. https://sacoes.saccounty.gov/content/dam/oes/docs/transition/evacuation-annex-2021.pdf

Significance Criteria and Methodology

Significance Criteria

Based on the CEQA Guidelines, a hazard or hazardous materials impact is significant if implementation of the project would:

1. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code 65962.5 and, as a result, would create a significant hazard to the public or the environment;

2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

3. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

4. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area;

6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

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

Methodology

The following analysis relies upon the available data, reports, and literature from federal, state, and local agencies. These documents were obtained from DTSC and the State Water Board online databases. The analysis considers the mandated remedial activities and cleanup by Aerojet and the potential for the proposed project to release hazardous materials or interfere with remedial activities.

Impacts And Analysis

Impact HAZ-1: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code

65962.5 AND, AS A RESULT, WOULD IT CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT

As discussed in the Regulatory Setting, Government Code 65962.5 is colloquially the "Cortese List". The Aerojet property is listed as a Superfund site on the NPL and the Cortese List. The 1989 PCD and the 1993/1994 Imminent and/or Substantial Endangerment Determination and Consent Order established specified procedures and obligations for Aerojet toward achieving the goals delineated in CERCLA for the protection of public health, welfare, and environment (refer to the Regulatory Setting discussion above). The Superfund site is grouped into OUs for the purpose of investigations and remediations as described in the introductory sections above.

The mining boundary includes large portions of OU-8 (Eastern Operating Unit) and OU-9 (Central Operating Unit), as well as two source area management areas of OU-7 (Hogout and Thermal Treatment Area) (Refer to Plate PD-4). The Hogout and Thermal Treatment Area source area management areas have begun field samplings to determine the full extent of contaminants. Groundwater well monitoring is ongoing in OU-9 where source areas are downgradient from the "Carve out" lands.

All of these areas still require completion of remedial investigations, risk characterization and remedy determination pursuant to Superfund regulations. In addition, the mining area overlays contaminated groundwater plumes that are currently undergoing monitoring and remediation in accordance with the remedies established and adopted for the Perimeter Groundwater OU (OU-5). The remediation related to OU-5 includes active monitoring wells, extraction wells, and groundwater extraction and treatment system (GET) A and GET B. Project activities (mining and grading have the potential to affect the remediation efforts, such as damaging or interfering with monitoring wells or remedial efforts, such as damaging or interfering with monitoring wells or exposure of a hazardous substance to the public or environment, or interfere with ongoing remediation efforts at Aerojet and would result in a ***potentially significant*** impact.

Mining would involve grading and excavation of the existing mine tailings, which are large mounds of rock piles, from historic gold mining operations. These piles reach up to approximately 40 feet tall, above the ground surface. Mining would consist of removing the rock that is above-ground only; mining activities are expected to remove anywhere from a few feet, up to a maximum anticipated distance of about 40 feet from the top of tailing piles. Because the mining plan is only targeted to grade and remove sand and gravel from the tailing piles and would not excavate areas with untouched soils (i.e., below pre-existing ground elevations), the project is not likely to encounter contaminated soils and would not encounter groundwater. Additionally, mining operations would be "dry mining", in other words, no excavation is conducted in water and no water is added (beyond what is required for dust suppression), which eliminates the potential to spread chemicals into groundwater.

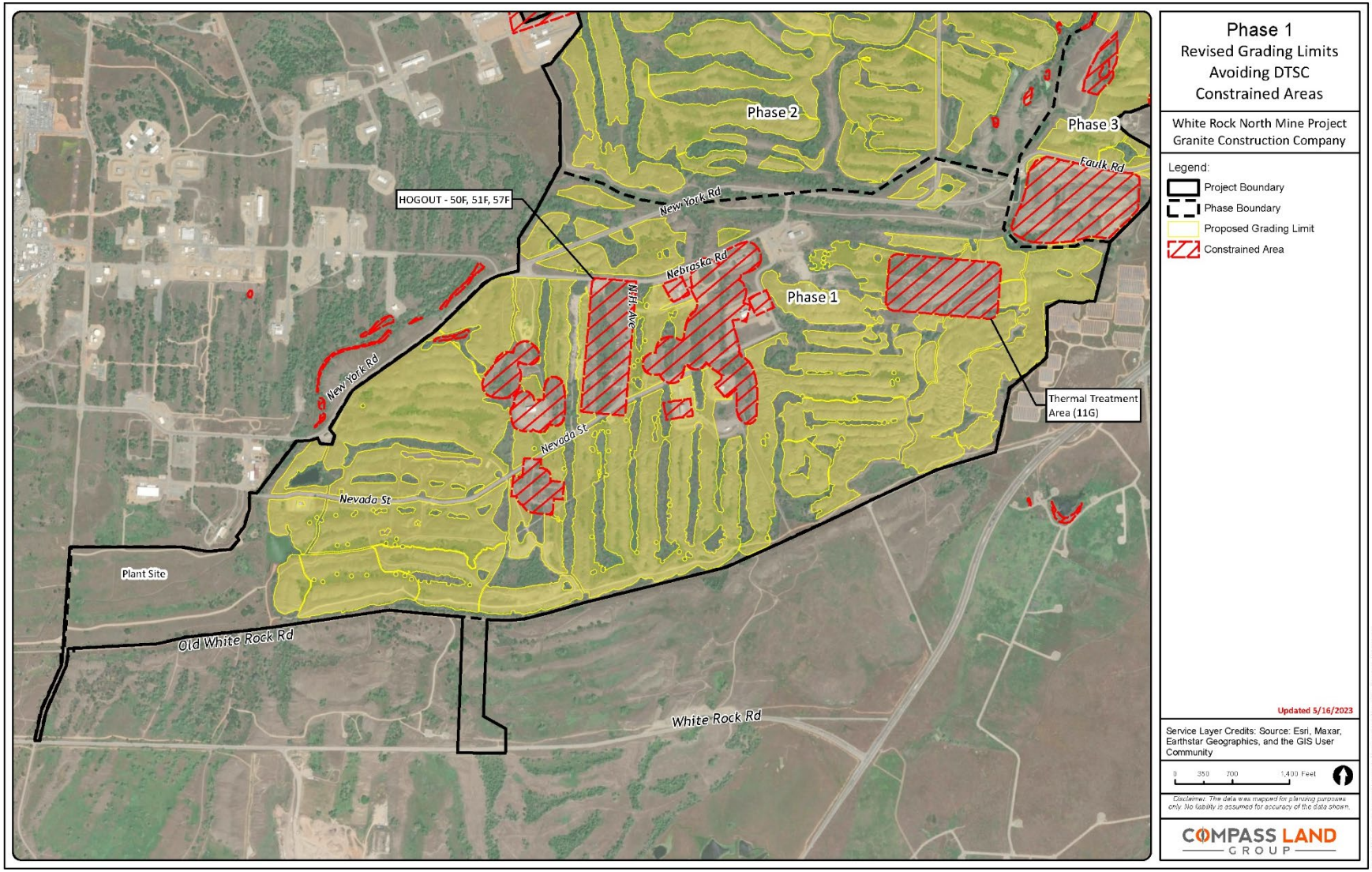
Aerojet has identified and mapped the known potential source areas (areas with contamination that have impacted groundwater at a depth of over 50 feet below ground

surface), known septic tanks, and RCRA units. Additionally, Aerojet has conducted investigations of potential source areas within OU-7 and OU-8. The data from these investigations were used to identify the locations where concentrations of detected chemicals exceed defined cleanup levels. These mapping efforts were utilized to develop the proposed mining plan in coordination with Aerojet in a way that avoids known contamination areas and would not interfere with ongoing remediation efforts. The mining plan would implement a delineated 100-foot buffer around all known locations where concentrations of chemicals exceed defined cleanup levels, as well as around the known septic tanks and RCRA units. These areas are referred to as "constrained areas" for purposes of the project description and are excluded from any ground disturbing activities in the proposed project. Refer to Plate PD-8 which illustrates the constrained areas and that the mining plan has avoided these delineated areas. The intent of implementing a "constrained area" buffer is two-fold – minimize exposure to workers and the environment and ensure Aerojet can continue with Superfund cleanup activity by not interfering with monitoring wells and stations.

In addition to "constrained areas", the project proponent has proposed phased mining, separating the entire mining boundary into three phases, as shown on Plate PD-7. Plate HAZ-4 is an exhibit focused on the grading limits during Phase 1. Phase 1 of the mining plan is within the Central OU (OU-9). Phase 1 also contains two source area management areas of OU-7 consisting of the Hogout and Thermal Treatment Area, all of which are shown as "constrained areas" and would be avoided by the project. Phases 2 and 3 of the mining plan would occur mostly in the Eastern OU (OU-8). Aerojet has completed site investigations to determine the location and limits of historical contamination, but these areas still require completion of remedial investigations, risk characterization and determinations for remedy/cleanup through the appropriate regulatory agencies.

The mining plan has been developed to avoid known source areas and monitoring wells, and mining activities will not disturb untouched soils (i.e., grading would occur above the pre-existing ground surface), as such, mining is not expected to encounter groundwater, and will likely not encounter contaminated soils or soil vapors. Construction of the conveyor undercossing (at the boundary of the Superfund site, within OU-9, refer to Plate PD-9) will involve excavation and grading activities that will either disturb surface soils or be below surface ground elevation. The conveyor undercrossing is outside of any known contamination areas, and also outside of the areas with additional restrictions and notification requirements per the PCD.

Plate HAZ-4: Phase 1 Mining Plan



Because the extent of vertical and lateral contamination has not been fully characterized pursuant to federal regulations, disturbance of soil could become a public health concern or lead to an environmental risk by inadvertently releasing contaminants to ambient air, surface water, or groundwater, or impact future remedial actions that are not yet planned for these areas. In addition, inadvertent releases of contaminants may put workers at risk – such as expose workers to contaminated materials or to chemicals that have been identified as chemicals of potential concern. Routes of exposure includes dermal contact with exposed soil, inhalation of volatized chemicals or ingestion of contaminated groundwater. As such, the following Mitigation Measures are recommended to ensure exposure from contaminated materials does not pose a health risk or impact future remedial actions.

Mitigation Measures HAZ-1 is included to ensure worker health and safety. As noted above, the construction of the conveyor undercrossing (within OU-9 boundary) will require excavation below ground surface. Mitigation Measure HAZ-2 requires soil sampling prior to any subsurface soil disturbance and continuous air monitoring during soil disturbance activities to ensure worker safety and prevent release of contaminants, or exposure to contaminated soils. Mitigation Measure HAZ-3 has been included to ensure that soil is disposed of properly so as not to result in unintentional spread or release of chemicals. Mitigation Measure HAZ-3 requires that any soil requiring export off-site due to installation of the conveyor must be isolated, profiled and disposed properly, following regulations outlined in CERLCA for proper disposal off-site. Mitigation Measure HAZ-4 requires the project proponent to establish an Emergency Response Plan in the event of an emergency or accidental release. The plan includes notification requirements and what to do if evacuation of nearby residents is warranted.

Because Aerojet is subject to the requirements of the PCD and Imminent and/or Substantial Endangerment and Consent Order, the project proponent will be notified by Aerojet of any ongoing remedial action or feasibility study within the mining areas. In addition, Aerojet will provide the project proponent with the location and design of all remedial actions required by the regulatory agencies. Based on the ongoing remedial action and feasibility studies, Aerojet will convey the information to the project proponent to establish appropriate buffers and protection of facilities when remedial activities may occur in the vicinity of mining activities. These buffers and protection measures will be implemented as appropriate and may be adjusted as necessary, based on the ongoing coordination as mining progresses. Mitigation Measure HAZ-5 has been included to allow Aerojet to alter mining exclusion areas based on updated evaluations. The measure also stipulates that the buffer, if altered, shall not be less than 100 feet and shall be clearly demarcated. This measure ensures that cleanup efforts by Aerojet are not hindered and ensures worker safety based on the best available information. Impacts are therefore ***less than significant with mitigation***.

IMPACT HAZ-2: CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT THROUGH REASONABLY FORESEEABLE UPSET AND ACCIDENT

CONDITIONS INVOLVING THE RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT

Because the project is located on a site identified pursuant to Government Code 65962.5, the potential for release of hazardous material into the environment has been captured under Impact HAZ-1 above. As discussed above, the mining “constrained areas” (refer to Plate PD-8) are areas that are excluded from mining activities. These areas have been established to not interfere with monitoring stations (to ensure that Aerojet can continue Superfund cleanup activity), and to minimize exposure to workers and the environment by avoiding known source areas. Mining would be “dry mining” and will not require water beyond what is necessary for dust control, thus avoiding the potential to contaminate groundwater or create runoff to surface waters. Mining would occur within the dredge tailing piles and will not disturb subsurface soil. Construction of the conveyor would require limited subsurface excavation and Mitigation Measure HAZ-2 requires soil sampling prior to ground disturbance and Mitigation Measure HAZ-3 includes precautionary soil management measures. Furthermore, the Emergency Response Plan required by Mitigation Measure HAZ-4 addresses accidental release or uncovering unexpected contamination.

With mitigation, the project would not create a significant hazard to the public or environment through any reasonable foreseeable upset or accident involving the release of hazardous materials into the environment. Impacts are ***less than significant with mitigation***.

IMPACT HAZ-3: CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT THROUGH THE ROUTINE TRANSPORT, USE, OR DISPOSAL OF HAZARDOUS MATERIALS

Hazardous materials that would be used at the site as part of mining operations include fuels, oils and lubricants for operational equipment that may be serviced or fueled onsite. The project may generate up to 500 gallons of used oil, 1,200 pounds of oily solids, and other miscellaneous non-hazardous waste per year. All products and substances would be managed and stored in accordance with local, state and federal regulations. All generated hazardous materials would be picked up by approved haulers for recycling and/or proper disposal.

As discussed in Impact HAZ-1, grading or trenching associated with the construction of the conveyor or internal roadways may result in excavated soil that is not returned to the ground, which will require proper disposal, in compliance with CERCLA disposal regulations. See Mitigation Measure HAZ-3 that requires testing of such soils and proper disposal and Mitigation Measure HAZ-5 for the requirement to establish an Emergency Response Plan. Impacts are ***less than significant with mitigation***.

IMPACT HAZ-4: EMIT HAZARDOUS EMISSIONS OR HANDLE HAZARDOUS OR ACUTELY HAZARDOUS MATERIALS, SUBSTANCES, OR WASTE WITHIN ONE-QUARTER MILE OF AN EXISTING OR PROPOSED SCHOOL.

The approved, but not yet constructed, Glenborough at Easton master planned community is located adjacent to the northern boundary of the project site. There are three school sites identified within the Glenborough and Easton land use master plans. One proposed school site would be within one-quarter of a mile from the project's boundary once constructed (refer to Plate PD-6). The Glenborough area consists of the "Carve-Out" Lands (discussed in the Central Operable Unit section) that the regulatory agencies have determined to be acceptable for reuse and eligible for future development, including residential uses. Mining activities, during Phase 2, in the areas north of Louisiana Road, would be within a quarter mile of a proposed school site for Glenborough. If Phase 2 mining activities are completed prior to commencement or completion of Glenborough development, then there would be no impact as it relates to project activities within one quarter mile of an existing school.

If development for Glenborough (specifically the completion of the nearest school site) occurs prior to initiation of Phase 2, mining activities could occur within a quarter mile of a school. However, as mining activities are limited to disturbing the tailing piles, which are above ground surface elevation and are not likely to encounter subsurface contaminated soil, the potential to release hazardous soil vapors is minimal to none. Furthermore, Mitigation Measure HAZ-5, which allows for alterations to the mining exclusion areas ("constrained areas") based on updated evaluations, further minimizes any potential for accidental release of hazardous soil vapors.

Mining equipment is similar to construction equipment, which means that there would be limited quantities of hazardous materials commonly used for such equipment (see impact HAZ-3 above). These include, but are not limited to, fuels, oils, hydraulic fluids, solvents, cleaners, and lubricants. All products and substances would be managed and stored in accordance with local, state and federal regulations, and all generated hazardous materials would be picked up by approved haulers for proper disposal.

With the implementation of Mitigation Measures HAZ-3, HAZ-4 and HAZ-5, which addresses preparation of a soil management plan, emergency response plan, and ongoing coordination with Aerojet, respectively, mining activities would not emit hazardous waste that may adversely affect any future school associated with Glenborough at Easton. Impacts are ***less than significant with mitigation***.

IMPACT HAZ-5: FOR A PROJECT LOCATED WITHIN AN AIRPORT LAND USE PLAN OR, WHERE SUCH A PLAN HAS NOT BEEN ADOPTED, WITHIN TWO MILES OF A PUBLIC AIRPORT OR PUBLIC USE AIRPORT, WOULD THE PROJECT

RESULT IN A SAFETY HAZARD OR EXCESSIVE NOISE FOR PEOPLE RESIDING OR WORKING IN THE PROJECT AREA

The nearest public airport is Mather Airport (MHR), located approximately three miles southwest of the project site. The MHR Comprehensive Land Use Plan (CLUP) Map provides safety zones and noise contours for MHR. Based on the CLUP Map, the project site is not within any of the safety zones and there is a small portion of the 60 dB and 65 dB noise contour extending into a portion of the project site. Mining operations will not result in a safety hazard or expose workers to excessive aircraft noise. Impacts are ***less than significant.***

IMPACT HAZ-6: IMPAIR IMPLEMENTATION OF OR PHYSICALLY INTERFERE WITH AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN

The proposed project does not alter any circulation patterns that could be used for evacuation; therefore, the project is not expected to impair implementation of, or physically interfere with, emergency response or evacuation plans. With the exception of employee vehicle trips, project implementation activities would occur within the interior Aerojet campus and would not have interface with roads used for public circulation. In addition, since mined material will be transported to an off-site processing plant via conveyor, there will not be heavy equipment trucks on local roadways; therefore, the project will not contribute to pavement and roadway deterioration that may interfere with emergency response or evacuation. Impacts are ***less than significant.***

IMPACT HAZ 7: EXPOSE PEOPLE OR STRUCTURES, EITHER DIRECTLY OR INDIRECTLY, TO A SIGNIFICANT RISK OF LOSS, INJURY OR DEATH INVOLVING WILDLAND FIRES

The project site is within a large expanse of alternating mine tailings and dense vegetation of trees, scattered with industrial buildings and private roadways throughout. The proposed project does not include new buildings that would be occupied by people and project implementation would result in less than ten people (i.e., workers) at any given time at the project site. The proposed mining operations will consist of earth-moving equipment, such as excavators, dozers, scrapers, graders, and haul trucks. The only flammable material expected at the project site is diesel or gasoline for the equipment. Therefore, the project is neither expected to expose a significant number of people to a significant risk of loss, injury or death, nor cause or contribute to fire that may become a wildland fire. Impacts are ***less than significant.***

Mitigation Measures

Mitigation Measure HAZ-1: Worker Health and Safety Plan

The project proponent shall prepare a Health and Safety Plan (HSP) to protect worker health and safety. This plan shall remain on file at the project site. The HSP shall include, at minimum, the following components:

- Minimum training requirements for on-site workers (such as 40-hour HAZWOPER trained);
- Inform all workers of all chemicals known to be present at the site and the various routes of human health risks (such as groundwater, soil vapors, and soil contamination);
- Criteria for upgrades in personal protective equipment (PPE);
- Emergency information such as directions to the nearest hospital and emergency telephone numbers; and
- Specific administrative requirements such as documentation of training, health and safety meetings and reporting.
- Coordination with Aerojet Rocketdyne to ensure application of and consistency with any standards required by Aerojet Rocketdyne, including notification to Aerojet Rocketydyne as may be required under that company's protocols.

Mitigation Measure HAZ-2: Soil Sampling and Air Monitoring

Prior to any subsurface soil disturbance associated with construction of the conveyor undercrossing, the project proponent shall collect soil samples in the vicinity of the proposed work area and the samples shall be analyzed in conformance with the PCD and DTSC approved soil analysis procedures (such as a Soil Analysis Plan (SAP)).

Results shall be provided to the County and Aerojet's Partial Consent Decree (PCD) Coordinator.

If samples are determined to be at or below established levels for protection of human health, then, based upon information prepared by and provided by the operator, the PCD Coordinator, in conjunction with the operator, or the operator shall:

a. Document (operator) and then review the documented results (PCD Coordinator);

b. Send correspondence prepared by the operator to the Lead Agencies (US EPA, DTSC and RWQCB) and Project Proponent with a summary of the results and indicate that activities may proceed.

c. Continuous air monitoring for VOCs with appropriate equipment (e.g., photo ionization detector or similar instrument) by the operator shall occur at all times workers are disturbing soils at the surface or subsurface.

If samples are determined to be above established levels for protection of human health, ground disturbing activities shall not commence and the area shall be delineated as a "constrained area". The PCD Coordinator, in conjunction with the operator, shall:

a. Document (operator) then review the documented results (PCD Coordinator);

b. Notify the Lead Agencies (US EPA, DTSC and RWQCB) (PCD Coordinator) based upon information prepared by the operator;

c. Determine if remedial measures are appropriate or feasible and implement consistent with the PCD (operator, in consultation with the PCD Coordinator);

d. Conduct follow up sampling for evaluation and testing (operator).

e. The area is to remain a constrained area and ground disturbing activities shall not commence until the area is below established levels for the protection of human health (operator).

Mitigation Measure HAZ-3: Precautionary Measures – Soil Management

During construction of the conveyor undercrossing and the temporary interior access roads/routes, any subsurface soil excavated and not placed back into the ground, will be required to be isolated, profiled and disposed of off-site. The project proponent shall prepare a Soil Management Plan. The Soil Management Plan should be reviewed by Aerojet's PCD Coordinator to ensure there is no conflict with the PCD. A copy of the Soil Management Plan must be kept onsite at all times.

1. Isolation – Excavated subsurface soils will be stored within roll off containers or placed upon visqueen sheets and covered to prevent erosion.

2. Profile - Soils will be profiled, using established laboratory analytical methods, for the chemicals identified in the most recent OU Sampling and Analysis Plan (SAP) corresponding to the location of excavated soils.

3. Disposal - Any soils requiring off-site disposal shall be transported off-site in accordance with transportation laws and local, state and federal regulations. The soil shall be disposed of at a CERCLA approved landfill.

Mitigation Measure HAZ-4: Emergency Response Plan

The project proponent shall establish an Emergency Response Plan (ERP) prior to issuance of a Work Authorization Plan. The ERP shall always be onsite and accessible to everyone on site. The ERP shall at minimum:

- Establish notification requirements for fire, hazardous material release, and uncovering unexpected hazardous substance during mining.
    - All contact names and numbers shall be reviewed and updated annually
- Establish notification requirements for evacuation of nearby residents in the event of an emergency.
- Emergency evacuation routes shall be updated at least annually. If there are temporary road closures due to repairs or construction, the routes shall be updated to reflect the temporary closures.

Mitigation Measure HAZ-5: Contamination Buffers

Prior to commencement of each Phase of mining, the project proponent shall coordinate with Aerojet, and based on the most up-to-date investigations, applicant shall install temporary fencing to demarcate the mining exclusion areas (also referred as “areas of constraints”). Constrained areas shall be defined as areas where mining is prohibited due to contamination concentrations exceeding defined cleanup levels. The fencing shall be placed to provide a buffer of no less than 100 feet to ensure worker safety.

10 - HYDROLOGY AND WATER QUALITY

INTRODUCTION

This chapter addresses the potential hydrology and water quality impacts associated with the proposed White Rock North Mine project (proposed project). The analysis describes the regulatory and environmental setting for hydrology, drainage, and water quality at the project site, and identifies and analyzes impacts related to these resources from implementation of the proposed project. This chapter also includes an evaluation of flooding and potential adverse changes to groundwater conditions.

ENVIRONMENTAL SETTING

SURFACE WATER RESOURCES

The project region has a mild Mediterranean climate, with hot, dry summers and cool, wet winters. Most of the precipitation falls during the winter months, from November to April. The project site is located within flat to gently rolling terrain situated at an elevational range of approximately 190 to 325 feet above mean sea level in the Sacramento Valley Subregion of the Great Central Valley floristic region of California (Baldwin et. al., 2012). The average winter low temperature in the vicinity of the project site is 41.5 degrees Fahrenheit (˚F) and the average summer high temperature is 91.2˚F. Average annual precipitation is approximately 20 inches, which falls as rain (National Centers for Environmental Information, NOAA, 2026). The project site is within the Aerojet Rocketdyne campus. The vast majority of the project site consists of undeveloped lands that were historically mined for gold. The tailings from the mining operation created a complex landscape of linear cobble piles up to approximately 40 feet tall interspersed with ravines and basins. Scattered throughout the dredger tailings landscape are the testing facilities for Aerojet Rocketdyne.

The project site is located south of Aerojet Road, north of White Rock Road, east of Nimbus Road, and west of Utah Avenue. The project site corresponds to a portion of the unsectioned Rancho Rio de Los Americanos Land Grant (Mount Diablo Base and Meridian) within the “Folsom, California” and “Buffalo Creek, California” 7.5-minute quadrangles (U.S. Geological Survey [USGS] 1980a and 1980b, respectively). The approximate center of the project site is located at 38. 614964° latitude and -121. 181353° longitude within the Lower American Watershed (Hydrologic Unit Code [HUC] #18020111) and Lower Sacramento (HUC #18020163, Natural Resources Conservation Service [NRCS], USGS, and U.S. Environmental Protection Agency [USEPA], 2016). The project site is bisected by Buffalo Creek (Plate IS-1).

As described in detail in the *Aquatic Resources Delineation Report for the Granite White Rock North Mine Project (*ECORP, 2021), there are a variety of surface waters features at the project site, including marshes, seasonal wetlands, creeks, drainage ditches, and

ponds. Most of these surface water features drain from the north and east portions of the project site to the southwest end with Buffalo Creek and Rebel Hill Ditch being the only named surface waters. Buffalo Creek eventually drains to the American River near the Aerojet site.

Drainage ditches and other larger stormwater infrastructure were constructed to convey water associated with water treatment and other historical facility operations. Roadside drainage ditches were mapped in the northeastern portion of the project site. These features are highly ephemeral, and were sparsely vegetated with Italian ryegrass. Larger stormwater drainage ditches were mapped throughout the northern, central, and southwestern portions of the project site.

Floodplain

The project site is not within the floodplain. The American River is approximately 1 mile north and west of the project site. When the American River floods, the floodplain spreads primarily north away from the direction of the project site.

The most recent FEMA Flood Insurance Rate Map (FIRM) revised in 2019, situates the entire project site outside of and FEMA flood zone (see Plate HYD-1,Plate HYD-2, and Plate HYD-3).

Erosion and Runoff Potential

Most soils can be categorized into hydrologic soil groups (which apply only to surface soil layers) based on runoff-producing characteristics. Hydrologic soil groups are factored into calculations of erosion potential when drainage plans are prepared. Based on a review of U.S. Natural Resources Conservation Service (NRCS, 2021) soil data, all of the project site soils are classified as hydrologic Groups A and B, which consist of soils with a low to moderate stormwater runoff potential, respectively.

Groundwater Resources

The project site is located in the Sacramento valley Groundwater Basin, South American Subbasin (DWR Basin No. 5-21.62). The South American Subbasin is bounded on the east by consolidated bedrock Sierra Nevada mountain range, on the west by the Sacramento River, on the north by the American River, on the south by the Cosumnes and Mokelumne Rivers. Groundwater in the South American Subbasin is contained within aquifers in aquifers of continental deposits of Late Tertiary to Quaternary age. These deposits include younger alluvium (consisting of flood basin deposits, dredge tailings and Holocene stream channel deposits), older alluvium, and Miocene / Pliocene volcanics (DWR, 2004).

Plate HYD-1: FEMA Flood Map 1 of 3

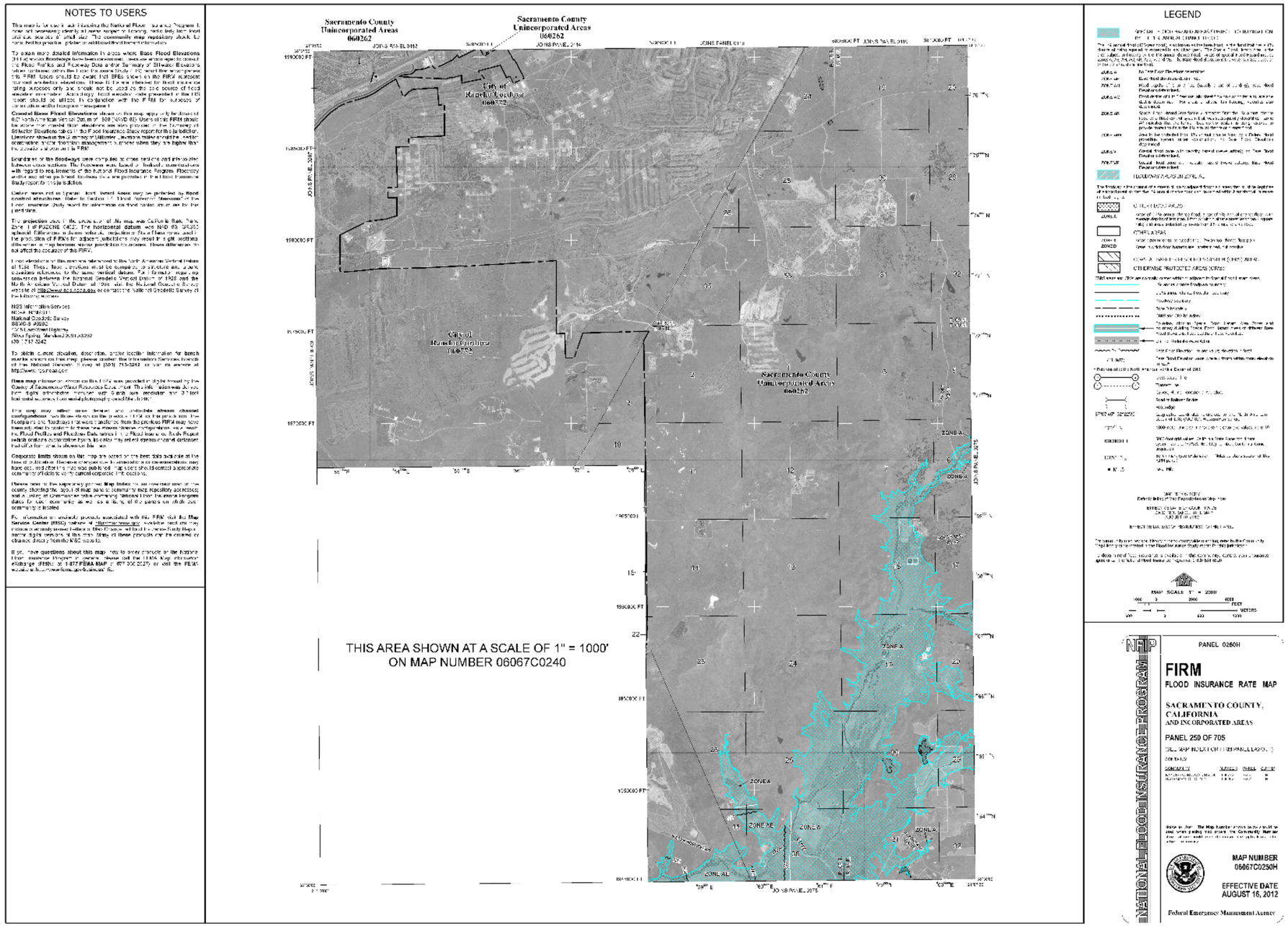


Plate HYD-2: FEMA Flood Map 2 of 3

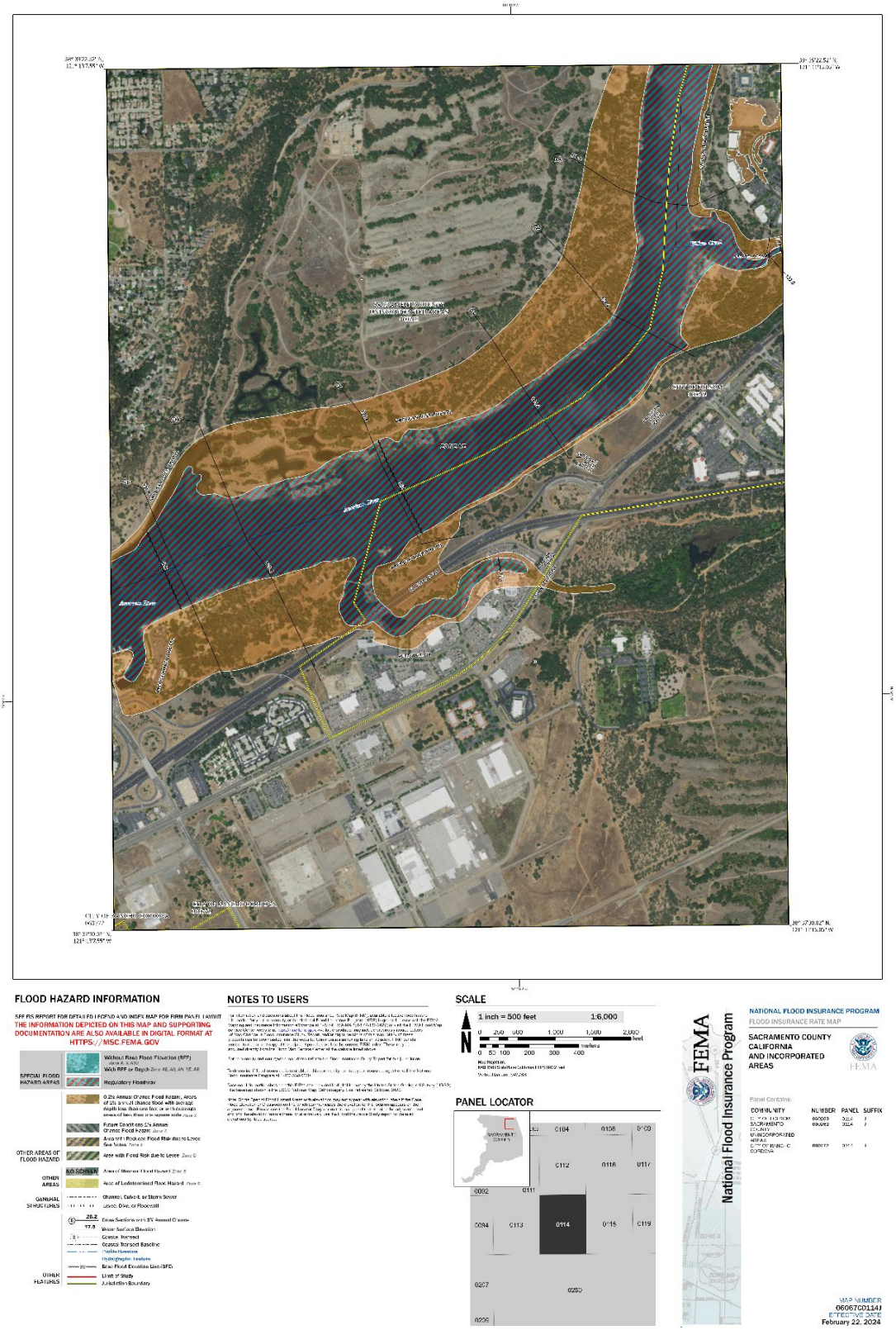


Plate HYD-3: FEMA Flood Map 3 of 3

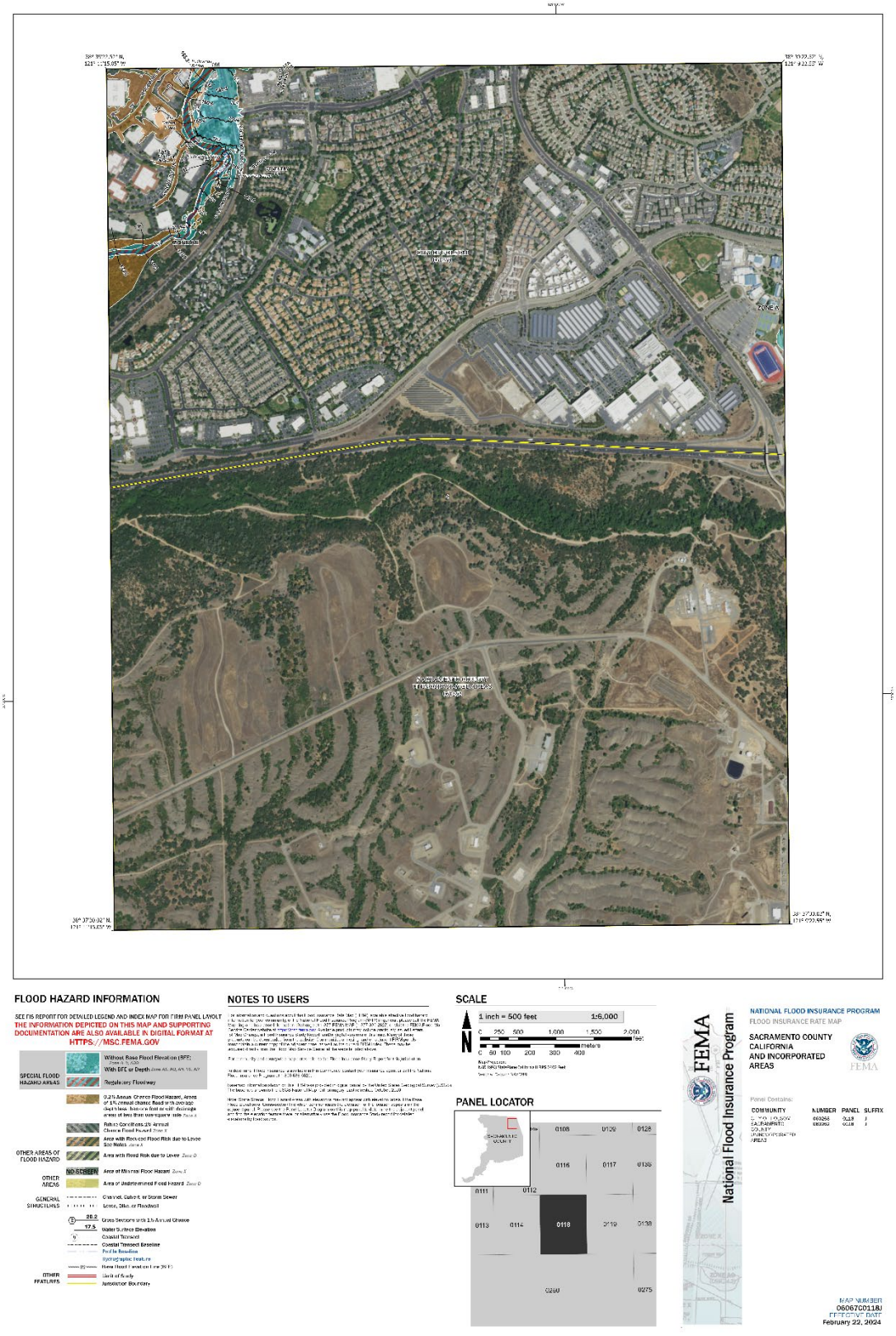
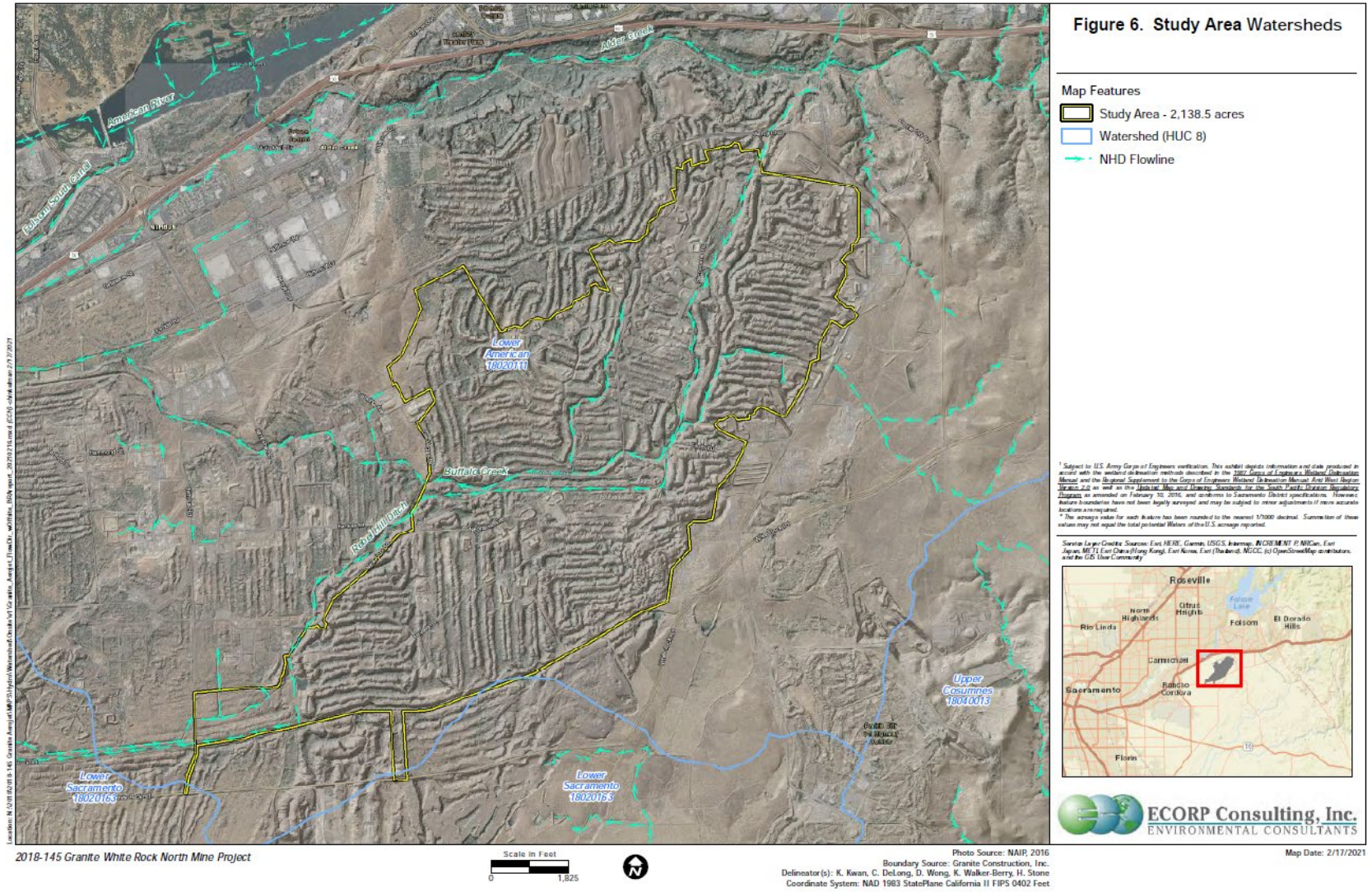


Plate HYD-4: Watersheds Map



Groundwater Quality and Subsidence

Groundwater in the South American Subbasin is typically a calcium magnesium bicarbonate or magnesium calcium bicarbonate. Other minor groundwater types include a sodium calcium or calcium sodium bicarbonate in the vicinity of Elk Grove and a magnesium sodium bicarbonate or sodium magnesium bicarbonate near the confluence of the Sacramento and American river (Bertoldi and other 1991). Total dissolved solids (TDS) ranged from 24-581 mg/l and average 221 mg/l based on 462 records (Montgomery Watson, 1993).

Groundwater quality has been degraded as a result of Aerojet's historical operations on the property. These activities include liquid, rock engine and component testing, solvent storage, engine cleaning, solid waste disposal, water filtration and other activities that involved the handling of chemicals. Types of chemicals that were handled included solvents, fuels, oxidizers, metals, acids, oils, and other miscellaneous compounds. These chemicals have infiltrated the groundwater aquifer in some areas and have been recorded in groundwater wells downgradient. Aerojet is in the process of treating the groundwater and removing harmful contaminants to improve groundwater quality for downgradient water users. Refer to the Hazardous Materials & Hazards chapter for more information about historic contamination and clean-up efforts at the Aerojet property.

Land subsidence from groundwater withdrawal has not historically represented a hazard in the South American Subbasin. Per the South American Subbasin Groundwater Sustainability Plan, the minimum threshold for land subsidence in the Basin is set at no more than 0.1 foot in any single year and a cumulative 0.5 feet in any five-year period, resulting in no long-term permanent subsidence. The most recently published annual report from 2024 indicates that there has not been a change in subsidence trends, and land subsidence within the Basin is in within the minimum threshold (SASB, 2025)

Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) is the federal regulation covering surface water quality – it does not address either groundwater or water quantity. Surface waters protected by the CWA must either be navigable or hydrologically connected to a navigable water. The provisions of the CWA are administered and regulated primarily by the Environmental Protection Agency (EPA), the California EPA (Cal EPA), the USACE, and the State and Regional Water Boards. Under the "umbrella" of Cal EPA, the State and Regional Water Boards are responsible for administration of the National Pollutant Discharge Elimination System program, which deals with stormwater pollution from construction, industrial areas, and municipal areas. The USACE is responsible for issuance of the CWA Section 404 permit, which deals with the discharge of dredged or fill material in a

surface water of the U.S., and the State and Regional Water Boards are responsible for issuance of the CWA Section 401 permit, which covers the same activity. Section 303(d) of the Clean Water Act (CWA) also requires States to identify waters that do not meet water quality standards, and to develop plans to address polluted water bodies on the 303(d) list (called Total Maximum Daily Load plans, or TMDLs).

WATER QUALITY CRITERIA AND STANDARDS

Pursuant to federal law, EPA published water quality regulations under Volume 40 of the Code of Federal Regulations (CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question, and (2) criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. Section 303(d) requires states to develop lists of the water bodies and associated pollutants that exceed water quality criteria.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT PROGRAM, SECTION 402

The NPDES permit program was established as part of the CWA to regulate municipal and industrial discharges to surface waters of the U.S. Federal NPDES permit regulations have been established for broad categories of discharges, including point source municipal waste discharges and nonpoint source stormwater runoff. NPDES permits generally identify limits on the concentrations and/or mass emissions of pollutants in effluent discharged into receiving waters; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

More specifically, the discharge prohibitions and limitations in an NPDES permit for wastewater treatment plants are designed to ensure the maintenance of public health and safety, protection of receiving water resources, and safeguarding of the water's designated beneficial uses. Discharge limitations typically define allowable effluent quantities for flow, biochemical oxygen demand, total suspended matter, residual chlorine, settleable matter, total coliform, oil and grease, pH, and toxic pollutants. Limitations also typically encompass narrative requirements regarding mineralization and toxicity to aquatic life.

In November 1990, EPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase I of the permitting program applied to municipal discharges of stormwater in urban areas where the population

exceeded 100,000 persons[1]. Phase II of the NPDES stormwater permit regulations became effective in March 2003 and required NPDES permits be issued for construction activity for projects that disturb between one and five acres. Phase II of the municipal permit system (i.e., known as the NPDES General Permit for Small Municipal Separate Storm Sewer Systems [Small MS4s], Order No. 2003-0005-DWQ as amended by 2013-0001-DWQ) required small municipality areas of less than 100,000 persons (hereinafter called Phase II communities) to develop stormwater management programs.

California's RWQCBs are responsible for implementing the NPDES permit system (refer to additional details in the subsection "State Regulations," below).

SECTION 401 WATER QUALITY CERTIFICATION OR WAIVER

Under Section 401 of the CWA, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the U.S.) must first obtain a certification from the appropriate agency stating that the fill is consistent with the State's water quality standards and criteria. In California, the authority to either grant water quality certification or waive the requirements is delegated by the State Water Resources Control Board (SWRCB) to the nine regional boards. Water quality in Sacramento County, including the project site, is under the jurisdiction of the Central Valley RWQCB.

SECTION 303(D) IMPAIRED WATERS LIST

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a TMDL for each of the listed pollutants. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. EPA must either approve a TMDL prepared by the state or disapprove the State's TMDL and issue its own. NPDES permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. The goal of the TMDL program is that, after implementation of a TMDL for a given pollutant on the 303(d) list, the causes that led to the pollutant's placement on the list would be remediated.

FEDERAL ANTIDEGRADATION POLICY

The Federal Antidegradation Policy (40 CFR 131.12) is designed to protect existing water uses, water quality, and national water resources. The federal policy directs states to adopt a statewide policy to protect and maintain water quality for existing in-stream uses and waters of exceptional recreational or ecological significance.

[1] Phase I also applies to storm water discharges from a large variety of industrial activities, including general construction activity if the project would disturb more than 5 acres.

Federal Emergency Management Agency (FEMA)

FEMA maintains and updates the National Flood Insurance Program maps, called the Federal Insurance Rate Maps (FIRM), that define areas of federal flood hazard. In Sacramento County and elsewhere the floodplains are identified based on U.S. Army Corps of Engineers (USACE) studies. FIRM maps denote the location of the federal 100-year flood area, 500-year flood area, and the Base Flood Elevation. In a 100-year floodplain, there is a 1% chance of flooding in a given year, and in a 500-year floodplain, there is a 0.2% chance of flooding in a given year. If an area is within a 100-year floodplain, flood insurance is required by most mortgage companies. FEMA is also responsible for the accreditation of levee systems (certification is by the USACE).

Not all 100-year floodplains are mapped by FEMA, because the focus of the FEMA FIRM maps is to provide information for insurance programs. Areas that have very little development that would be at risk from flooding, such as rural areas and wilderness areas, typically are not mapped. Areas not mapped by FEMA, or areas where there are additional site-specific constraints that change the shape of the floodplain, are referred to as local floodplains in this EIR.

State Regulatory Setting

Regional Water Quality Control Board (RWQCB)

23 CCR charges the nine RWQCBs with responsibility for overseeing water quality control. The RWQCBs are responsible for protecting actual or potential beneficial uses of water, including municipal, industrial, and agricultural water supplies and recreation. Each RWQCB has authority to supervise hazardous waste cleanup at sites referred by local agencies and in cases where water quality is affected or threatened. Either the DTSC or the RWQCB may be responsible for cleanup of sites of significant contamination by hazardous wastes. The two agencies often work together to ensure that their requirements are consistent and are implemented as intended.

Department of Toxic Substances Control (DTSC)

22 CCR gives the DTSC responsibility for regulating hazardous waste management at the State level. The DTSC regulates the treatment, storage, and disposal of hazardous waste in accordance with 22 CCR and the RCRA. The DTSC administers the state and federal Superfunds for cleanup of major hazardous waste contamination sites.

Porter-Cologne Water Quality Act

Porter-Cologne is enacted as part of the California Water Code, and is intended to protect the quality of waters within the State. Porter-Cologne covers many of the same issues as the Federal Clean Water Act (see below), but is specific to the needs and objectives of the State. Waters protected by the Clean Water Act must be navigable or hydrologically connected to navigable waters, whereas Porter-Cologne protects non-navigable, or “isolated”, waters. The State Water Resources Control Board (State Water Board) and the Regional Water Quality Control Boards (Regional Water Board) are

responsible for the coordination and control of water quality protection efforts related to Porter-Cologne.

Streambed Alteration Agreement

Section 1602 of the Fish and Game Code requires applicants to notify CDFW before beginning a project if the project will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake or use materials from a streambed. Notification is generally required for any project that will take place in the vicinity of a river, stream, or lake. The recommendations of CDFW may include steps to protect water quality.

Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan)

The Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins (Central Valley RWQCB, 2019) identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Sacramento and San Joaquin hydrologic regions. State and federal laws mandate protecting designated "beneficial uses" of water bodies. State law defines beneficial uses as "domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Water Code Section 13050[f]).

The beneficial uses of any specifically identified water body generally apply to all tributary streams to that water body. Those water bodies not specifically designated for beneficial uses in the Basin Plan are assigned the Municipal and Domestic Supply (MUN) use, in accordance with the State Water Board Resolution No. 88-63. Although specific surface waters have not been identified for groundwater recharge or freshwater replenishment in the Basin Plan, these additional protected beneficial uses are designated in the Basin Plan. Unless otherwise designated by the Central Valley RWQCB, all groundwater is considered suitable or potentially suitable for municipal or domestic water supply (MUN).

The Basin Plan describes a set of designated beneficial uses for each water body. Beneficial uses help to define the resources, services, and qualities of aquatic systems. Beneficial uses also serve as a basis for establishing water quality objectives and discharge prohibitions. The Basin Plan contains specific numeric water quality objectives that are applicable to each water body or portions of water bodies. Objectives have been established for bacteria, dissolved oxygen, pH, pesticides, electrical conductivity, total dissolved solids, temperature, turbidity, and trace elements. Numerous narrative water quality objectives have also been established. Finally, the Basin Plan contains a set of implementation plans, which represent the Central Valley RWQCB's programs and specific plans of action for meeting water quality objectives and protecting beneficial uses.

State Water Resources Control Board

SWRCB and its nine RWQCBs administer water rights and enforce pollution control standards throughout the state. SWRCB is responsible for granting of water right permits and licenses through an appropriation process following public hearings and appropriate environmental review by applicants and responsible agencies. In granting water right permits and licenses, SWRCB must consider all beneficial uses, including water for downstream human and environmental needs. In addition to granting the water right permits needed to operate new water supply projects, SWRCB also issues water quality-related certifications to developers of water projects under Section 401 of the CWA.

National Pollutant Discharge Elimination System Permit System

Waste Discharge Requirements for Construction

The SWRCB's statewide stormwater general permit for construction activity (Order WQ 2022-0057-DWQ, NPDES Permit No. CAS000002) is applicable to all construction activities that would disturb one acre of land or more (SWRCB 2022). Additionally, the SWRCB's statewide stormwater general permit associated with industrial activities (Order WQ 2014-0057-DWQ, amended by Order WQ 2015-0122-DWQ and Order WQ 2018-0028-DWQ, NPDES Permit No. CAS000001).

Through the NPDES and WDR process, SWRCB seeks to ensure that the construction and post-construction conditions at a project site do not cause or contribute to direct or indirect impacts on water quality (i.e., pollution and/or hydromodification) upstream and downstream. To comply with the requirements of the General Permits, project applicants must file a notice of intent with the SWRCB to obtain coverage under the permit; prepare a Storm Water Pollution Prevention Plan (SWPPP); and implement inspection, monitoring, and reporting requirements appropriate to the project's risk level as specified in the SWPPP. The SWPPP includes a site map, describes construction activities and potential pollutants, and identifies Best Management Practices (BMPs) that would be employed to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources, such as petroleum products, solvents, paints, and cement.

Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of post-construction permanent BMPs that will remain in service to protect water quality throughout the lifespan of the project. All NPDES permits also have inspection, monitoring, and reporting requirements.

NPDES Industrial General Permit for Stormwater Discharges Associated with Industrial Activity

The Statewide General Permit for Stormwater Discharges Associated with Industrial Activities, Order 2014-0057-DWQ, as amended in 2015 and 2018, (Industrial General

Permit) implements the federally required stormwater regulations in California for stormwater associated with industrial activities discharging to waters of the United States. The Industrial General Permit regulates discharges associated with nine federally defined categories of industrial activities, including surface mining activities. The SWRCB and RWQCB implement and enforce the Industrial General Permit. The Industrial General Permit regulates industrial storm water discharges and authorized non-storm water discharges (NSWDs) from specific categories of industrial facilities, and industrial storm water discharges and authorized NSWDs from facilities designated by the Regional Water Boards to obtain coverage under this General Permit. The Industrial General Permit does not apply to industrial storm water discharges and NSWDs that are regulated by other individual or general NPDES permits.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) was signed into law in 2014. SGMA tasks California DWR to draft a Strategic Plan for its Sustainable Groundwater Management (SGM) Program. DWR's SGM Program will implement new and expanded responsibilities identified in the 2014 SGMA. Some of these expanded responsibilities include: (1) developing regulation to revise groundwater basin boundaries; (2) adopting regulations for evaluation and implementing Groundwater Sustainability Plans (GSPs) and coordination agreements; (3) identifying basins subject to critical conditions of overdraft; (4) identifying water available for groundwater replenishment; and (5) publishing best management practices for the sustainable management of groundwater.

The Sacramento Valley – South American Subbasin GSP was reviewed and approved by DWR on July 27, 2023. The actions outlined in the plan are intended to be used to sustainably manage activities related to groundwater levels such that there is no adverse impact to identified beneficial uses, which includes chronic overdraft, reduction in groundwater, seawater intrusion, impacts to water quality, land subsidence, and impacts on beneficial use of surface water.

Local Regulatory Setting

County of Sacramento General Plan

The General Plan includes multiple Elements containing policies relevant to flooding and water quality: the Agriculture Element, Circulation Element, Conservation Element, and Safety Element. There are many policies within each Element, but the policies of greatest relevance to the project are included below.

CO-26: Protect areas susceptible to erosion, natural water bodies, and natural drainage systems.

CO-28: Comply with other water quality regulations and NPDES permits as they apply to County projects or activities, such as the State's Construction General Permit and Aquatic Pesticides Permit.

Sacramento County Floodplain Management Ordinance

Sacramento County Municipal Code Title 16, Chapter 16.02, Section 16.02.060 (Ordinance SZC-2016-0023) requires a Floodplain Management Permit for any new construction, substantial improvements, or alteration of land within a special flood hazard area (FEMA Zones A, AO, Al-A30, AE, A99, AH, or AR). These standards control filling, grading, and other development which may increase flood damage; and are intended to prevent or regulate the construction of flood barriers that would unnaturally divert flood waters or which may increase flood hazards in other areas. Per Ordinance SZC-2016-0023, Section 905-01, a project applicant must apply for a development permit for construction in a FEMA flood zone, and approval by the floodplain administrator is required. The permit application must include plans showing elevations of proposed structures and the elevations of areas proposed for materials and equipment storage; the proposed elevation in relation to mean sea level, of the lowest floor of all structures; the proposed elevation in relation to mean sea level to which any structure will be flood-proofed; the location, volume, and depth of proposed fill and excavation within the 100-year floodplain and floodway; and a description of the extent to which any watercourse will be altered or relocated as a result of project development. These requirements do not apply to the proposed project.

Significance Criteria and Methodology

Significance Criteria

According to the CEQA Guidelines, impacts may be significant if the Project results in one of the following:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would

    i. result in substantial erosion or siltation on or off-site;

    ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

    iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater systems or provide substantial additional sources of polluted runoff; or

iv. impede or redirect flood flows?

4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Methodology

Compass Land Group and Chang Consultants ("Compass and Chang") prepared a drainage memorandum for the project and submitted the memorandum to Sacramento County Department of Water Resources – Drainage for review and comments on May 23, 2022 (Appendix HY-1). The drainage memorandum was deemed technically adequate by County DWR.

Issues not Discussed Further

Substantially Alter the Existing Drainage Pattern of the Site or Area, Including Through the Alteration of the Course of a Stream or River or Through the Addition of Impervious Surfaces, in a Manner which Would Result in Substantial Erosion or Siltation on or Off-Site

Please refer to the Geology and Soils Chapter of this document for a detailed discussion of erosion, which concluded impacts would be less than significant through compliance with existing regulations.

Impede or Redirect Flood Flows

The project site is not within a floodplain or floodway. Therefore, project implementation would not impede or redirect flood flows and there would be ***no impact***.

Risk Release of Pollutants from Inundation in a Tsunami, Seiche, or Flood Hazard Zone

The project site is not located in a tsunami or seiche hazard zone. Thus, there would be no risk for release of pollutants from inundation in a tsunami, seiche, or flood hazard zone, and there would be ***no impact*.**

Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan

The project would not result in activities that would impair water quality, increase runoff, or result in impacts to the groundwater basin. The project will comply with applicable water quality standards and regulations as discussed further under Impact HY-1 below. Additionally, the project would not result in impacts to groundwater as discussed further under Impact HY-2 below. Because the project would not result in impacts to these topical areas, the project would not conflict with or obstruct implementation of a water

quality control plan or sustainable groundwater management plan, and impacts would be ***less than significant***.

IMPACTS AND ANALYSIS

IMPACT HY-1: VIOLATE ANY WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS OR OTHERWISE SUBSTANTIALLY DEGRADE SURFACE OR GROUNDWATER QUALITY

Mining and reclamation activities would include excavating and grading that would disturb sediment that could be transported in stormwater runoff during the winter rainy season. In addition, disturbed sediment could be transported via wind, particularly during the summer months. Sediments, in addition to being contaminants in their own right, can transport other contaminants, such as trace metals, nutrients, and hydrocarbons that adsorb suspended sediment particles. Groundwater quality can be affected either by direct contact during construction-related earthmoving activities, or by indirect contact as a result of percolation of stormwater. If mining or reclamation activities resulted in release of substances the would pollute or degrade runoff or groundwater, it would be a potentially significant impact.

The project would mine surface aggregate material, and does not propose subsurface excavation. As such, a buffer of approximately 15 to 25 feet of native undisturbed material would remain above the groundwater table, and groundwater would not be directly impacted. The proposed project plans no uses, such as: settling or process water ponds, that would discharge waters in a manner that would affect the groundwater quality. Average daily water use for dust control at the site is estimated at 40,500 gallons/day during mining operations (based on an anticipated 9 daily loads using a 4,500-gallon water truck). Water used for dust control would be treated water from Teichert Grantline Plant (supplied by Aerojet after extraction and treatment) and would not be in amounts that are significant enough to cause runoff and impair water quality

Mining and implementation of the reclamation plan does not involve work in surface waters or excavation in groundwater, but the site would be exposed to rainfall events. The project site is dominated by dredge tailings and coarse materials and direct precipitation is expected to quickly dissipate via percolation, evaporation, and lateral infiltration through the mine floor and/or side slopes. Persistent ponding or sheet-flow surface runoff is not expected, and backup measures (such as installation of ditches, swales and/or pipes) would be implemented to direct water to existing drainage courses if needed. In addition, direct precipitation would also be controlled through a combination of berms, silt fences, revegetation, hay bales and other erosion control measures to ensure that land and water resources are protected from erosion, gullying, sedimentation, and potential contamination.

Surface and groundwater would be protected from siltation and pollutants as required by the State Surface Mining and Reclamation Act, Federal Clean Water Act, the Porter-Cologne Water Quality Control Act, County ordinances, Regional Water Quality Control Board and the State Water Resources Control Board. As required, the project proponent will comply with NPDES Industrial Storm Water General Permit requirements, including implementation of a SWPPP with Best Management Practices (BMPs) to control erosion, sedimentation, and pollution. As required, the project will also implement a Spill Prevention, Control, and Countermeasure Plan (SPCC Plan) and Hazardous Materials Business Plan pursuant to 40 CFR Part 112 and 19 CCR Section 2729, respectively. Compliance with the above-listed laws, regulations, ordinances, and permit terms would require the project to reduce pollutants in operational stormwater runoff generated in the proposed project site through implementation of BMPs and pollutant source control measures, along with preparation of a SWPPP with associated BMPs designed to control construction-related erosion and pollutants. Therefore, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality, and therefore this impact is considered ***less than significant.***

IMPACT HY-2: SUBSTANTIALLY DECREASE GROUNDWATER SUPPLIES OR INTERFERE SUBSTANTIALLY WITH GROUNDWATER RECHARGE SUCH THAT THE PROJECT MAY IMPEDE SUSTAINABLE GROUNDWATER MANAGEMENT OF THE BASIN

The project involves removal of aggregate material from dredge tailings with reclamation to an undeveloped open space use ready for future redevelopment. The project would not introduce new impervious surfaces that would interfere with groundwater recharge.

Groundwater would be utilized as the supply source for dust control during mining activities. Granite currently has a permitted mining site south of White Rock Road, the Rio Del Oro (RDO) mine, which uses water from a groundwater extraction and treatment plant to supply water for dust suppression. The proposed project north of White Rock Road would also use treated groundwater for dust suppression. Groundwater would come from the nearby Teichert Grantline Plant, which uses treated groundwater supplied by Aerojet as part of its groundwater extraction and treatment program.

The White Rock North mine project would use approximately 37.2 acre-feet of water per year. Water use associated with the proposed project would be less than that associated with the existing RDO operation. The estimated groundwater usage for the RDO mine was between 49.4 acre-feet per year and 148.2 acre-feet per year. The environmental document for the RDO mine analyzed impacts to groundwater availability associated with that project and concluded that the extraction of this quantity of water from the aquifer was not expected to result in a significant drop in groundwater level below the RDO site. The well and associated water use for the RDO mine is an existing

condition, and implementation of the proposed project would not introduce any new impacts beyond the baseline condition related to groundwater use in the project vicinity.

The project would not result in new additional impervious surface that would prevent groundwater recharge. Groundwater use on the project would be minimal, and the proposed project would use less water than was anticipated for the RDO mine and will not impede sustainable groundwater management in the basin. Therefore, impacts related to impacts on groundwater and the sustainable use of the groundwater are ***less than significant***.

IMPACT HY-3: SUBSTANTIALLY ALTER THE EXISTING DRAINAGE PATTERN OF THE SITE OR AREA, INCLUDING THROUGH THE ALTERATION OF THE COURSE OF A STREAM OR RIVER OR THROUGH THE ADDITION OF IMPERVIOUS SURFACES, IN A MANNER WHICH WOULD RESULT IN:

- ***SUBSTANTIALLY INCREASE THE RATE OR AMOUNT OF SURFACE RUNOFF IN A MANNER WHICH WOULD RESULT IN FLOODING ON OR OFF-SITE;***
- ***CREATE OR CONTRIBUTE RUNOFF WATER WHICH WOULD EXCEED THE CAPACITY OF EXISTING OR PLANNED STORMWATER SYSTEMS OR PROVIDE SUBSTANTIAL ADDITIONAL SOURCES OF POLLUTED RUNOFF:***

The surface hydrology of the project site was heavily disrupted during historic gold mining of the site. The project would remove many of the dredge tailings created by past mining activities, with reclamation resulting in finished grades that are more representative of the naturalized terrain that would have existed prior to the existence of the mine tailings. A drainage analysis was prepared for the project and deemed adequate by Sacramento County DWR demonstrating that the project would not result in significant alterations to the existing drainage patterns on the project site (Appendix HY-1). The proposed mining would maintain sheet flow along the existing drainage patterns to avoid diversion. This would ensure that the proposed project is consistent with the watershed assumptions for surrounding master plan projects including Glenborough and Easton.

The project would not generate new impervious surfaces that would increase runoff. The project would not impact the course of a stream or river. As further detailed in HY-1 above, the project would be required to comply with a number of existing regulations that would ensure project operation does not impair water quality. The nature of removing dredge tailings while avoiding impacts to existing streams, creeks and waterways would not significantly alter the existing drainage patterns or create flooding on or offsite, and impacts would be ***less than significant.***

MITIGATION MEASURES

None recommended.

11 LAND USE

INTRODUCTION

This chapter addresses the potential land use, planning and growth inducement impacts associated with the proposed White Rock North Mine project (proposed project). The analysis in this chapter considers the potential impacts of the project related to the compatibility of the proposed project with adjacent land uses, consistency of the project with applicable policies, zoning requirements, and other relevant planning and policy documents, specifically in regards to policies and standards adopted for the intent of reducing physical environmental effects.

ENVIRONMENTAL SETTING

EXISTING AND HISTORICAL LAND USES

The project site is within the Aerojet Special Planning Area (SPA). The majority of the project site consists of unutilized lands that were historically mined for gold by dredges. The dredge tailings from the mining operation created a complex landscape of linear cobble piles up to approximately 40 feet tall interspersed with ravines and basins. Located throughout the dredge tailings landscape are the testing facilities for Aerojet, many of which have been decommissioned or closed.

Aerojet and its subsidiaries have operated at their Rancho Cordova campus, which includes the project site area, since 1953. Today, many of these operations have either closed or are in the process of closing. Operations included manufacturing liquid and solid propellants for rocket engines for military and commercial use, and formulating chemicals including rocket propellant agents, agricultural pesticides, pharmaceuticals, and other industrial chemicals.

During the course of their operations, Aerojet and its subsidiaries disposed of unknown quantities of hazardous waste chemicals, including TCE and other chemicals associated with rocket propellants, on the property. On September 20, 2011, the EPA issued an order to Aerojet requiring them to conduct a cleanup of rocket fuel-polluted groundwater at the “Aerojet General Corporation Superfund Site” in Rancho Cordova. This groundwater cleanup represents the latest phase of a long-term decontamination project at the site. Refer to the Hazardous Materials Chapter for additional discussion and analysis specific to the historical contamination and cleanup efforts related to the Aerojet Superfund Site

SURROUNDING LAND USES

Aerojet’s industrial and commercial operations are scattered throughout the SPA boundary. Besides Aerojet operations, the predominant land uses in the general vicinity of the proposed project are aggregate mining, industrial, and open space. The Teichert

Grant Line East processing plant is located approximately 1 mile south of the project site, and the Prairie City State Vehicular Recreation Area (SVRA) is located approximately 0.7 miles southeast of the project site. Nearby residential communities are within the City of Folsom (approximately 1.5 miles east of the project site) and City of Rancho Cordova (approximately 1.3 miles southwest of the project site). Other residential communities have been approved for development in proximity to the project site, including the Glenborough, and Easton Place, and Folsom Ranch Specific Plans that are adjacent to the project on the north side, and contain a mix of future uses. These areas may develop during the life of the project.

Land Use Designations

General Plan Designation

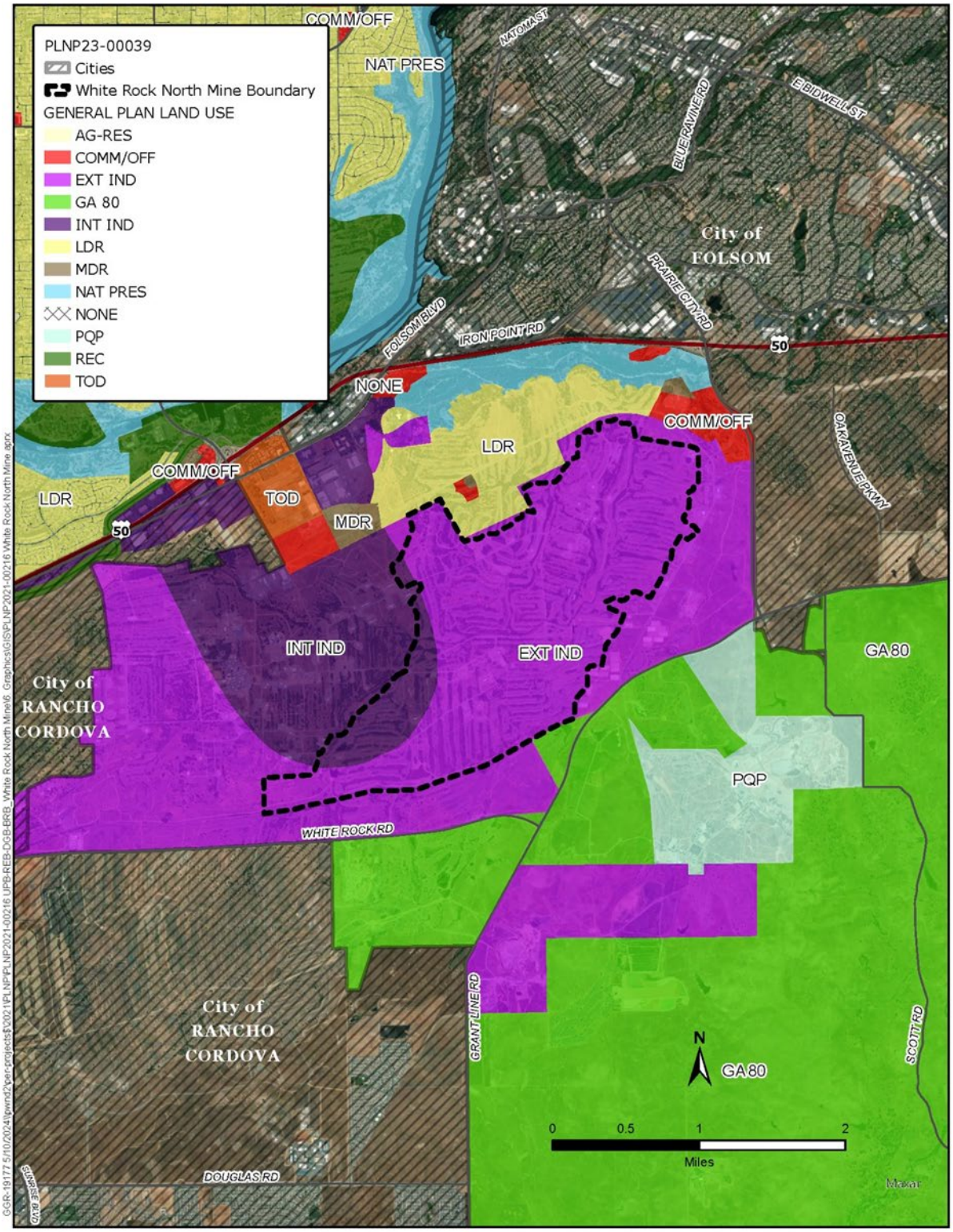
The majority of project parcels are designated Extensive Industrial (EXT IND) and a portion of the project parcels are designated Intensive Industrial (INT IND) by the Sacramento County General Plan (Plate LU-1). The project site is located within the Urban Services Boundary (USB). A portion of the site is located within the Urban Policy Area (UPA), but the majority of the site is outside of the UPA. Immediately adjacent land use designations include Extensive Industrial to the north and west; and General Agriculture (80 acres) to the south and east.

The EXT IND land use designation allows activities that require large areas of land and do not require urban levels of services. EXT IND areas are not located within the urban portion of the County and do not need urban services.

Zoning

The project is located within the Aerojet SPA, entirely within the area designated as “Aerojet Industrial Zone.” Uses permitted in the Industrial Zone are depicted in Section 508-313, Exhibit “B” of the Aerojet SPA. Surface mining has been determined to be a compatible use through the Aerojet SPA Implementation Agreement Regarding Surface Mining.

Plate LU-1: General Plan Designations



Regulatory Setting

State

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act of 1975 (SMARA) is administered by the State of California, Department of Conservation, Division of Mine and Reclamation. SMARA provides a comprehensive surface mining and reclamation policy to assure that adverse environmental impacts are minimized and mined lands are reclaimed to a usable condition. The reclamation plans required by SMARA and County Code define the basis for achieving safe and useable end land uses for mines. Furthermore, SMARA encourages the production, conservation, and protection of the State's mineral resources, Public Resources Code Section 2207 provides an annual reporting requirement for all mines in the State, under which the State Mining and Geology Board is also granted authority and obligations.

Sacramento County is the SMARA Lead Agency on all mines that operate in the unincorporated County of Sacramento. The County of Sacramento, Planning and Environmental Review Division is charged with regulating mines in accordance with SMARA, County Code, General Plan, and Zoning Code regulations. Mine operators are required to post a financial assurance (e.g. performance bond, certificate of deposit, or letter of credit) in an amount that would be sufficient to reclaim the mine in accordance with the approved reclamation plan in the event that the operator fails to do so. The County of Sacramento, as the Lead Agency, conducts annual reviews to assure financial assurances remain adequate based on the condition of the mine in relation to the approved reclamation plan. In addition, Planning and Environmental Review conducts annual inspections of all mines within the unincorporated county to ensure compliance with SMARA and use permit conditions

Local

Sacramento County Code

The Sacramento County Code (SCC) is the codification and compilation of general ordinances adopted by the Board of Supervisors. For surface mining projects, SCC Title 20 regulates surface mining and reclamation.

Sacramento County recognizes that the extraction of minerals is essential to the continued economic well-being of the County and to the needs of society and that the reclamation of mined lands is necessary to prevent or minimize adverse effects on the environment and to protect the public health and safety. Sacramento County also recognizes that surface mining takes place in diverse areas where the geologic, topographic, climatic, biological, and social conditions are substantially different and that final reclamation and the specifications therefore may vary accordingly.

The purpose and intent of the surface mining and reclamation chapter of the SCC is to ensure the continued availability of important mineral resources, while regulating surface mining operations as required by SMARA to ensure that:

- Adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative land uses.

- The production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment.

- Residual hazards to the public health and safety are eliminated.

Sacramento County 2030 General Plan

Policy CO-37: Apply the aggregate resources combining land use category to additional areas as subsequent studies determine them to contain mineral resources which are feasible and appropriate for mining. The aggregate resources combining land use category shall not be a prerequisite to (SM) surface mining combining zoning or regulation through the procedures of an existing special planning area zoning designation in conjunction with proposed surface mining.

Policy CO-39: Surface mining operations shall be subject to appropriate mitigation measures and shall avoid creating any significant nuisances, hazards, and adverse environmental impacts, unless the Board of Supervisors makes the findings to override as required by CEQA Guidelines Section 15091.

Policy CO-40: Extractive uses and associated processing uses and facilities shall maintain adequate minimum setbacks to protect adjoining land uses.

Policy CO-41: Surface mining shall not be allowed without adequate plans for reclamation of mined areas. Reclamation plans should be based on a plan for post-mining land use that is consistent with the land use strategies of the General Plan.

Policy CO-44: Due to the predicted shortages of aggregates in Sacramento County mining of mineral resources within the Urban Services Boundary (USB) is encouraged, where consistent with Habitat Conservation Plans or other County initiated conservation programs and where such mining does not preclude successful completion of these plans, to avoid the potential loss of these mineral resources as a result of potential urban development.

Note: This policy is not intended to preclude mining outside of the USB.

Policy CO-57: In areas where topsoil mining is permitted, it shall be done so as to maintain the long-term productivity of the soil.

Sacramento County Zoning Code

The Sacramento County Zoning Code (Zoning Code) implements the land use policies of the County. The Zoning Code ensures all development conforms to these policies by regulating land use and providing development standards. The County also has adopted special policies related to surface mining as part of Chapter 4 of the Zoning Code, known as the "Surface Mining (SM) Combining Zone."

In addition to the general information required for use permit applications as set forth in Zoning Code Chapter 6, section 6.4.1, an application for a mining use permit is also subject to Zoning Code section 4.8.11. This section requires the following additional information: a mining plan; a reclamation plan; soil, geologic and hydrologic data; a traffic and parking plan; air pollution control measures; noise data; waste data; a drainage plan; a hazardous materials plan; a landscaping plan; a lighting plan and a regional analysis of ancillary uses.

All aggregate mining operations, including sand and gravel mines, are also subject to Zoning Code section 4.8.12, operating standards for aggregate mining operations. This section includes requirements for the following: operating and haul-out hours, fences, warning and complaint information signs, visual screening, mining setbacks, noise minimization, backfilling, slope stability, recontouring, and roadways.

Aerojet Special Planning Area

The Aerojet SPA, a component of the Zoning Code, encompasses approximately 12,000 acres of land owned or previously owned by Aerojet. The intent of the Aerojet SPA is to regulate land use and development of all of the real property covered under the SPA. The Aerojet SPA allows certain types of development activities within the SPA as a matter of right, including "existing uses" as specifically defined (SPA §508-304(a)). The application of the Aerojet SPA to surface mining uses is addressed in detail in the Aerojet Special Planning Area Implementation Agreement Regarding Surface Mining, entered into by Sacramento County and Aerojet, dated August 29, 2006 ("SPA Implementation Agreement").

The Aerojet SPA property has been the subject of surface mining operations and contains aggregate resources the removal of which will facilitate the property's future use. The County recognizes the importance of the aggregate present on the Aerojet SPA property for meeting the County's present and future construction material needs and sustaining economic development within the County (SPA Implementation Agreement, Recital F). On August 29, 2006, the County Board of Supervisors determined that surface mining qualifies as a permitted "existing use" under the Aerojet SPA. Thus, the County may condition and regulate surface mining on the Aerojet SPA property, but, as a permitted use may not deny the right to engage in such activity.

The County and Aerojet did still intend that surface mining uses would achieve the specified performance and development standards of the Aerojet SPA, and otherwise applicable County standards for reclamation, permitting, mitigation and environmental review (SPA Implementation Agreement, Recital G and Section 1A). More specifically, consistent with the requirements of SMARA and County Code, surface mining operations under the Aerojet SPA are required to obtain approval of a Reclamation Plan by the Board of Supervisors following a recommendation by the Planning Commission.

Significance Criteria and Methodology

Significance Criteria

Land Use and Planning

Based on the CEQA Guidelines, a land use and planning impact is significant if project implementation results in any of the following:

1. Physically divide an established community; or

2. Cause a significant impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Methodology

An evaluation of the potential land use impacts associated with implementation of the project was based on a review of planning documents, including various components and policies of the Sacramento County General Plan, other County regulations affecting planning and implementation of the General Plan, and consultation with appropriate agencies.

Issues Not Discussed Further

Physically divide and established community

The project does not introduce any new development and would result in mining of dredge tailings within an undeveloped portion of the Aerojet SPA. Upon completion of mining, the site would be reclaimed to an end use of undeveloped land that would facilitate future development as permitted by existing development standards and the Aerojet SPA. Therefore, the project would not physically divide an established community and this topic is not discussed further.

IMPACTS AND ANALYSIS

IMPACT LU-1: CAUSE A SIGNIFICANT ENVIRONMENTAL IMPACT DUE TO A CONFLICT WITH ANY LAND USE PLAN, POLICY, OR REGULATION OF AN AGENCY ADOPTED FOR THE PURPOSE OF AVOIDING OR MITIGATING AND ENVIRONMENTAL EFFECT.

This section evaluates the project's consistency with relevant land use planning documents and pertinent policies within those documents that avoid or mitigated an environmental effect. Plan, policy or regulation consistency that is specific to other topical areas in this document are captured within those respective chapters

CONSISTENCY WITH SMARA

Through the application process, the County has reviewed the project's reclamation plan and financial assurance cost estimate (FACE) and required all necessary changes for SMARA compliance. The County has determined that the project as proposed complies with SMARA. The proposed project does not conflict with the Surface Mining chapter of the County Code (Title 20, Chapter 20.04) which regulates surface mining in unincorporated Sacramento County.

CONSISTENCY WITH THE SACRAMENTO COUNTY GENERAL PLAN

The following is a summary of the General Plan policies applicable to mining projects and the Project's overall consistency with each policy.

CO-37: The proposed project is consistent with policy CO-37. The project site does not currently contain a surface mining overlay (SM) designation. However, pursuant to policy CO-37, the SM combining zone is not a prerequisite for this site, as aggregate mining operations may be carried pursuant to the provisions contained in the Aerojet SPA.

CO-39: The proposed project is consistent with this policy in that mitigation measures are included as appropriate in this EIR which has been prepared in accordance with CEQA. Additionally, pursuant to CEQA, the Board of Supervisors, will adopt appropriate findings and overrides for any impact determined to be significant and unavoidable should they choose to approve the project.

CO-40: The proposed project is consistent with General Plan Policy CO-40. The project's mining operations are proposed to be set back a minimum of 25 feet from property lines in accordance with Zoning Code Section 4.8.12.F.2.

Furthermore, the project complies with the Zoning Code requirement for at least a 25- foot setback from the public right-of-way. The setbacks required by the Zoning Code are designed to be adequate to protect the adjoining land uses.

CO-41: The proposed project is consistent with General Plan Policy CO-41. The project includes a reclamation plan, which the County has reviewed and found consistent with County ordinances and SMARA requirements. The County also has determined that the post-mining land uses are consistent with the land use strategies of the General Plan and Aerojet SPA. The reclamation plan is based on the mine being reclaimed to open space.

CO-44: The proposed project is consistent with General Plan Policy CO-44. The reclamation plan will be further reviewed by the California State Department of Conservation, Division of Mine Reclamation. The State's review will confirm that the reclamation plan is adequate for the mined areas. The project is located within the USB and the Project does not conflict or preclude completion of County initiated conservation programs such as the South Sacramento Habitat Conservation Plan (SSHCP). Furthermore, the project will extract mineral resources prior to urban development in the area. This prevents the loss of mineral resources due to urban development because the minerals resources will have been excavated before urban development occurs.

CO-57: The proposed project is consistent with General Plan Policy CO-57. As described further in the Geology and Soil Chapter, the project is not likely to encounter topsoil due to the disposition of the aggregate material dispersed through the dredge tailings. If topsoil is encountered, the Project's topsoil will be salvaged in accordance with SMARA's Performance Standards for topsoil salvage, maintenance, and redistribution (SMARA Regulation 3711). According to SMARA Regulation 3711 all salvageable topsoil suitable for revegetation shall be removed as a separate layer; topsoil resources or stockpiles shall be mapped prior to stripping; soil salvage operations and phases shall be carried out in accordance with the schedule; topsoil and suitable growth media shall be used to phase reclamation; and topsoil and suitable growth media shall be redistributed in a manner that results in a stable, uniform thickness consistent with the approved end uses. The topsoil will be used for reclamation of the mined area to undeveloped open space.

CONSISTENCY WITH THE SACRAMENTO COUNTY ZONING CODE AND AEROJET SPA

Zoning Code Section 4.8.12 outlines the operating standards for aggregate mines. This section allows for deviations from the standard operating hours if made a condition of the use permit (or in this case SPA Implementation Permit). This section also includes requirements for the following: operating and haul out hours, fences, warning and complaint information signs, visual screening, mining setbacks, noise minimization,

backfilling, slope stability, recontouring, and roadways. Therefore, upon approval of the requested deviations from the standard operating hours, the actions associated with the SPA Implementation Permit (for mining) and Use Permit (for the off-site conveyor connection) would be consistent with the Zoning Code. Any potential conflicts specific to an environmental area of concern are addressed in the appropriate topical chapter.

Regarding surrounding land uses, the proposed use would be consistent with, and therefore compatible with, existing zoning currently found on parcels to the north, east and west. The project parcels are within the Aerojet SPA and are currently designated “Aerojet Industrial Zone”, in which mining activities are also governed by the SPA Implementation Agreement. As described in the regulatory section above, mining is a permitted use under the SPA, and the SPA Implementation Agreement sets forth the procedures that state future mining projects may be appropriately regulated and conditioned. Topical analyses in this EIR have identified mitigation measures that would reduce potential impacts to less than significant. Through implementation of the recommended mitigation measures, the project would not result in a conflict with any land use plan, policy, or regulation of an agency adopted for the purpose of avoiding or mitigating an environmental effect, and impacts are ***less than significant with mitigation***.

12 NOISE

INTRODUCTION

This chapter addresses the potential noise impacts associated with the proposed White Rock North Mine (proposed project). The analysis in this chapter considers the potential impacts of the project related to noise during both construction and operations.

ENVIRONMENTAL SETTING

The White Rock North Mine Project (project) is proposed by Granite Construction Company on a 2,136 ± acre portion of the Aerojet Rocketdyne, Inc. (Aerojet) campus in unincorporated Sacramento County, California. Specifically, the project area is located north of White Rock Road and south of Aerojet Road. Existing land uses in the immediate project vicinity include aggregate mining, industrial, and open space. The existing project area is shown in Plate PD-1 of the Project Description Chapter.

NOISE FUNDAMENTALS AND TERMINOLOGY

Noise is often described as unwanted sound, and thus is a subjective reaction to the physical phenomenon of sound. Sound is variations in air pressure that the ear can detect. Sound levels are measured and expressed in decibels (dB), which is the unit for describing the amplitude of sound[1]. Because sound pressure levels are defined as logarithmic numbers, the values cannot be directly added or subtracted. For example, two sound sources, each producing 50 dB, will produce 53 dB when combined, not 100 dB. This is because two sources have two times the energy (not volume) of one source, which results in a 3 dB increase in noise levels.

Most environmental sounds consist of several frequencies, with each frequency differing in sound level. The intensities of each frequency combine to generate sound. Acoustical professionals quantify sounds by “weighting” frequencies based on how sensitive humans are to that particular frequency. Using this method, low and extremely high frequency sounds are given less weight, or importance, while mid-range frequencies are given more weight, because humans can hear mid-range frequencies much better than low and very high frequencies. This method is called “A” weighting, and the units of measurement are called dBA (A-weighted decibel level). In practice, noise is usually measured with a meter that includes an electrical “filter” that converts the sound to dBA. The threshold at which one hears sounds is considered to be zero (0) dBA. The range of sound in normal human experience is 0 to 140 dBA. Decibels and other technical terms are defined in Table NO-1.

[1] Equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals.

The ambient noise level is defined as the noise from all sources near and far, and refers to the noise levels that are present before a noise source being studied is introduced. A synonymous term is pre-project noise level.

Table NO-1: Acoustical Terminology

Term	Definition
Ambient Noise Level:	The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.
Intrusive Noise:	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Decibel, dB:	A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter.
Frequency, Hz:	The number of complete pressure fluctuations per second above and below atmospheric pressure.
Community Noise Equivalent Level, CNEL:	The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.
Day / Night Noise Level, Ldn:	The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.
Equivalent Noise Level, Leq:	The average noise level during the measurement or sample period. Leq is typically computed over 1, 8, and 24-hour sample periods.
Lmax, Lmin:	The maximum or minimum sound level recorded during a noise event.
Ln:	The sound level exceeded “n” per percent of the time during a sample interval. L10 equals the level exceeded 10 percent of the time (L90, L50, etc.).

Term	Definition
Noise Exposure Contours:	Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and Ldn contours are frequently utilized to describe community exposure to noise.
Sound Exposure Level, SEL; or Single Event Noise Exposure Level, SENEL:	The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time integrated A-weighted squared sound pressure level for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.
Sound Level, dBA:	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

ACOUSTIC FUNDAMENTALS

SOUND PROPERTIES

A sound wave is introduced into a medium (air) by a vibrating object. The vibrating object (e.g., vocal cords, the string and soundboard of a guitar, the diaphragm of a radio speaker) is the source of the disturbance that moves through the medium. Regardless of the type of source that creates the sound wave, the particles of the medium through which the sound moves are vibrating in a back-and-forth motion at a given frequency (pitch)[2]. A commonly used unit for frequency is cycles per second, called hertz (Hz)[3].

A wave transports energy along a medium. The amount of energy carried by a wave is related to the amplitude (loudness) of the wave. A high-energy wave is characterized by high amplitude; a low-energy wave is characterized by low amplitude. The amplitude of a wave refers to the maximum amount of displacement of a particle from its rest position. The energy transported by a wave is directly proportional to the square of the

[2] The frequency of a wave refers to how often the particles vibrate when a wave passes through the medium. The frequency of a wave is measured as the number of complete back-and-forth vibrations of a particle per unit of time. If a particle of air undergoes 1,000 longitudinal vibrations in 2 seconds, then the frequency of the wave would be 500 vibrations per second

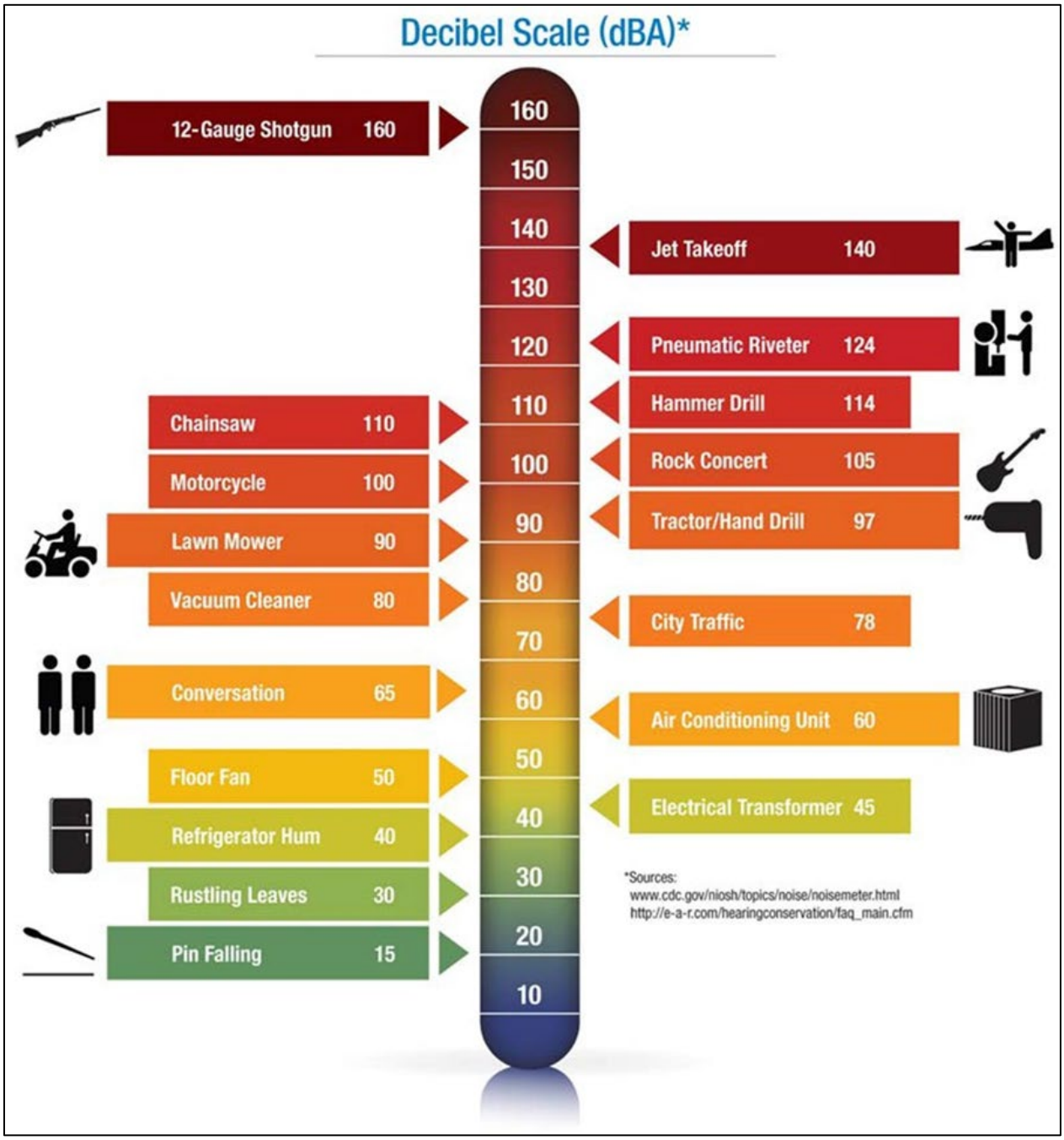
[3] Hertz (abbreviated: Hz) is the standard unit of measurement used for measuring frequency. Since frequency is measured in cycles per second, one hertz equals one cycle per second. Hertz is commonly used to measure wave frequencies, such as sound waves, light waves, and radio waves. For example, the average human ear can detect sound waves between 20 and 20,000 Hz. Sound waves close to 20 Hz have a low pitch and are called "bass" frequencies. Sound waves above 5,000 Hz have a high pitch and are called "treble" frequencies.

amplitude of the wave. This means that a doubling of the amplitude of a wave is indicative of a quadrupling of the energy transported by the wave.

Sound and the Human Ear

Because of the ability of the human ear to detect a wide range of sound-pressure fluctuations, sound-pressure levels are expressed in logarithmic units called dB to avoid a very large and awkward range in numbers. The sound pressure level in decibels is calculated by taking the log of the ratio between the actual sound pressure and the reference sound pressure squared. The reference sound pressure is considered the absolute hearing threshold (Caltrans, 2013). Use of this logarithmic scale reveals that the total sound from two individual sources, each measured at 65 dBA, is 68 dBA, not 130 dBA; that is, doubling the source strength increases the sound pressure by 3 dBA. Typical noise levels associated with various sources are shown on (Plate NO-1).

Plate NO-1: Common Noise Sources



Because the human ear is not equally sensitive to all sound frequencies, a specific frequency-dependent rating scale was devised to relate noise to human sensitivity. A dBA scale performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. The basis for compensation is the faintest sound audible to the average ear at the frequency of maximum sensitivity. This dBA scale has been chosen by most authorities to regulate environmental noise. With respect to how humans perceive and react to changes in noise levels, a 1-dBA

increase is imperceptible, a 3-dBA increase is barely perceptible, a 6-dBA increase is clearly noticeable, and a 10-dBA increase is subjectively perceived as approximately twice as loud (Egan, 1988), as presented in Table NO-2[4].

Table NO-2: Subjective Reaction to Changes in Noise Levels of Similar Sources

Change in Level, dBA	Subjective Reaction	Factor Change in Acoustical Energy
1	Imperceptible (except for tones)	1.3
3	Just Barely Perceptible	2.0
6	Clearly Noticeable	4.0
10	About Twice (or half) as Loud	10.0
Note: dBA = A-weighted decibels, Source: Egan, 1988.		

Noise Attenuation

Stationary “point” sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate of approximately 6+ dBA per doubling of distance from the source, depending upon environmental conditions (i.e., atmospheric conditions and noise barriers, either vegetative or manufactured, etc.). Widely distributed noises, such as a large industrial facility, spread over many acres or a street with moving vehicles (a “line” source), would typically attenuate at a lower rate, approximately 4 to 6 dBA per doubling distance from the source (also dependent upon environmental conditions) (Caltrans, 2020). Noise from large construction sites (with heavy equipment moving dirt and trucks entering and exiting the site daily) would have characteristics of both “point” and “line” sources, so attenuation would generally range between 4.5 and 7.5 dBA per doubling of distance.

Vibration

Vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of groundborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as operating factory machinery, or transient, such as explosions. As is the case with airborne sound, groundborne vibrations may be described by amplitude and frequency.

[4] Table NO-1 was developed on the basis of the reactions of test subjects to changes in the levels of steady-state pure tones or broadband noise and changes in levels of a given noise source. It is probably most applicable to noise levels in the range of 50–70 dBA, as this is the usual range of voice and interior noise levels.

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean square (RMS), as in RMS vibration velocity. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (Federal Transit Authority (FTA), 2018). PPV and RMS are normally described in inches per second (in/sec).

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table NO-3, which was developed by the California Department of Transportation (Caltrans), shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second.

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a period of one second. Like airborne sound, the RMS velocity is often expressed in decibel notation, as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA, 2018). This is based on a reference value of one microinch per second (µin/sec).

The background vibration-velocity level in residential areas is usually approximately 50 VdB. Groundborne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA, 2018).

Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Construction activities can generate groundborne vibrations, which can pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants (FTA, 2018).

Table NO-3: Effects of Various Vibration Levels on People and Buildings

Velocity Level, PPV (in / sec)	Vibration Level, VdB	Human Reaction	Effects on Buildings
0.01	68	Barely perceptible	No effect
0.04	80	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structures
0.08	86	Distinctly perceptible to strongly perceptible	Recommended upper limit of the vibration to which ruins and ancient monuments should be subjected
0.1	88	Strongly perceptible	Virtually no risk of architectural damage to normal buildings
0.3	98	Strongly perceptible to Severe	Threshold at which there is a risk of damage to older residential structures
0.5	102	Severe – Vibration considered unpleasant	Threshold at which there is a risk of damage to newer residential structures.

Notes:
PPV = peak particle velocity
In / sec = inches per second
VdB= vibration decibel

Source: Caltrans, 2020

Construction vibrations can be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact pile driving, and wrecking balls. Continuous vibrations result from vibratory pile drivers, large pumps, horizontal directional drilling, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment. “Architectural” damage can be classified as cosmetic only, such as minor cracking of building elements, while “structural” damage may threaten the integrity of a building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to a building. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is in a high state of disrepair and the construction activity occurs immediately adjacent to the structure. Table NO-4 shows the criteria established by the FTA for the likelihood of structural damage due to vibration.

Table NO-4: Groundborne Vibration Criteria: Architectural Damage

Building Category	PPV (in / sec)	Lv (VdB)a
Reinforced concrete, steel, or timber (no plaster)	0.5	102
Engineered concrete masonry (no plaster)	0.3	98
Non-engineered timber and masonry buildings	0.2	94
Buildings extremely and susceptible to vibration damage	0.12	90

Notes:
PPV = peak particle velocity;
in / sec = inches per second;
Lv= vibration level;
VdB = vibration decibel. A RMS velocity calculated from VdB using the reference of one micro-inch / second.

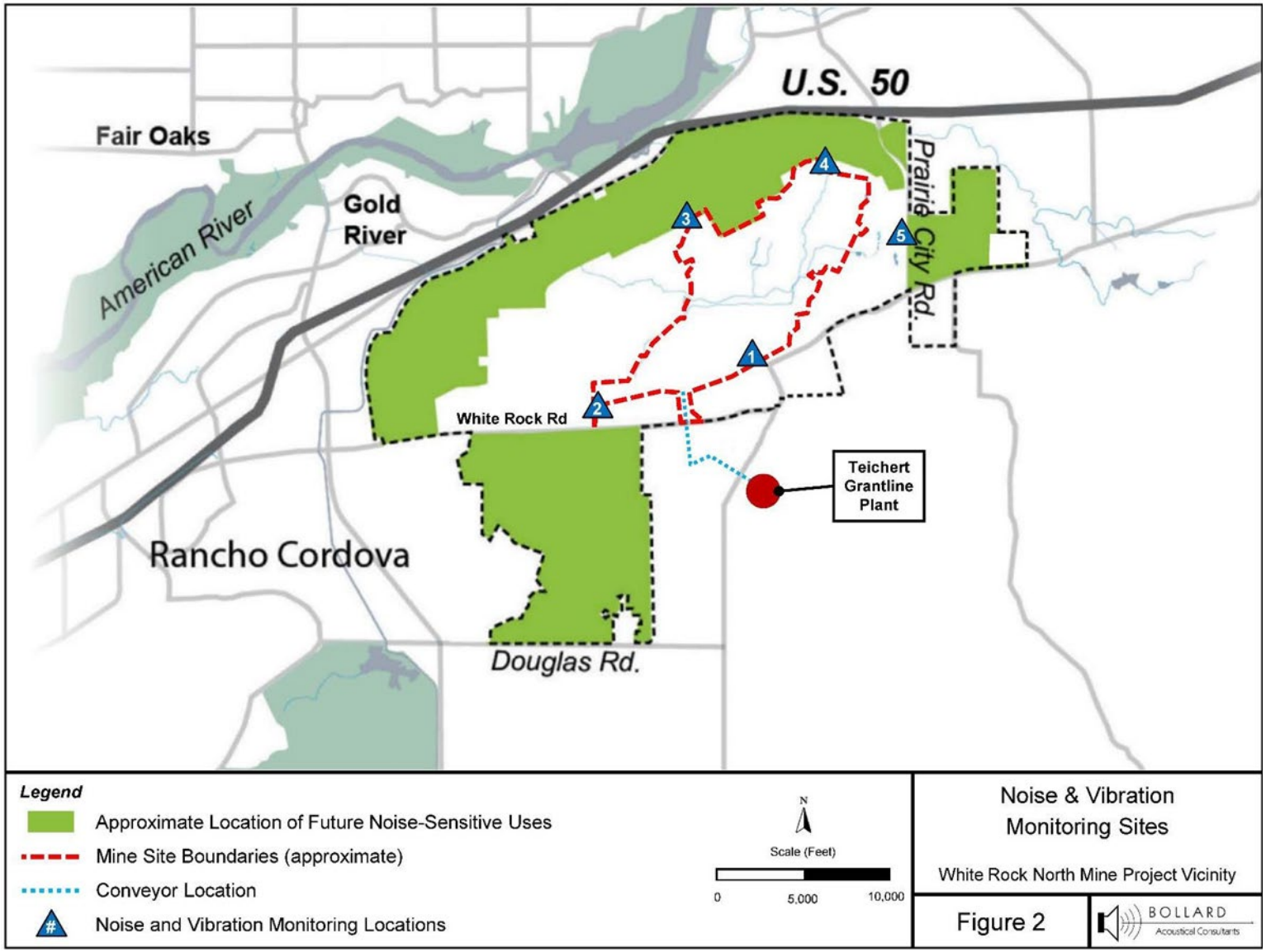
Source: FTA, 2018

EXISTING NOISE ENVIRONMENT

The project area is not currently located in close proximity to sensitive land uses. The nearest existing sensitive land uses consist of residential developments approximately 9,000 feet to the south and 3,800 feet to the north. Development of residential uses of the Regency project is currently occurring in in the City of Folsom's Folsom Ranch, approximately 4,500 feet to the east of the project site. In addition, future residential development is in the planning stages at locations bordering the Aerojet facility within the Easton planning area to the north, and master planned areas within the city of Rancho Cordova to the southwest. Those future residential development areas are identified in Plate NO-2.

The existing ambient noise environment in the project vicinity is defined primarily by local and distant traffic. As such, the ambient noise environment in the project vicinity varies depending on proximity to local roadways.

Plate NO-2: Future Residential Development Areas



REGULATORY SETTING

FEDERAL

Although not directly applicable to the proposed project, the research that supported the development of federal community noise standards is broadly applicable in understanding human response to different noise levels and is summarized below for the reader's edification.

U.S. ENVIRONMENTAL PROTECTION AGENCY NOISE CONTROL ACT

The Federal Noise Control Act of 1972 (Public Law 92-574) established a requirement that all federal agencies administer their programs to promote an environment free of noise that would jeopardize public health or welfare[5]. Although the U.S. Environmental Protection Agency (EPA) was given a major role in disseminating information to the public and coordinating federal agencies, each federal agency retains authority to adopt noise regulations pertaining to agency programs[6].

In 1974, in response to the requirements of the federal Noise Control Act, the EPA identified indoor and outdoor noise level limits to protect public health and welfare (communication disruption, sleep disturbance, and hearing damage). Outdoor and indoor noise exposure limits of 55 dB Ldn and 45 dB Ldn, respectively, are identified as desirable to protect against speech interference and sleep disturbance for residential, educational, and healthcare areas. The sound-level criterion identified to protect against hearing damage in commercial and industrial areas is 70 dB 24-hour Leq (both outdoors and indoors).

The EPA's Office of Noise Abatement and Control was established to coordinate federal noise control activities. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at lower levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to state and local governments.

U.S. DEPARTMENT OF TRANSPORTATION AND U.S. EPA VIBRATION GUIDELINES

To address the human response to groundborne vibration, the FTA of the U.S. Department of Transportation has set forth guidelines for maximum-acceptable vibration criteria for different types of land uses. These include 65 VdB for land uses where low

[5] The EPA was given the responsibility for providing information to the public regarding identifiable effects of noise on public health and welfare, publishing information on the levels of environmental noise that will protect the public health and welfare with an adequate margin of safety, coordinating federal research and activities related to noise control, and establishing federal noise emission standards for selected products distributed in interstate commerce. The Noise Control Act also directed that all federal agencies comply with applicable federal, State, interstate, and local noise control regulations.

[6] The EPA can, however, require other federal agencies to justify their noise regulations in terms of the Noise Control Act policy requirements.

ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities); 80 VdB for residential uses and buildings where people normally sleep; and 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices) (FTA, 2018).

Standards have also been established to address the potential for groundborne vibration to cause structural damage to buildings. These standards were developed by the Committee of Hearing, Bio Acoustics, and Bio Mechanics (CHABA) at the request of the EPA (FTA, 2018). For fragile structures, CHABA recommends a maximum limit of 0.25 in/sec PPV (FTA, 2018).

State

California Department of Health Services Office of Noise Control

The California Department of Health Services (DHS) Office of Noise Control has studied the relationship between noise levels and different land uses. As a result, the DHS has established four categories for judging the severity of noise intrusion on specified land uses. Noise in the “normally acceptable” category places no undue burden on affected receptors and would need no mitigation. As noise rises into the “conditionally acceptable” range, some mitigation of exposure (as established by an acoustical study) would be warranted. At the next level, noise intrusion is so severe that it is classified “normally unacceptable” and would require extraordinary noise reduction measures to avoid disruption. Finally, noise in the “clearly unacceptable” category is so severe that it cannot be mitigated.

In 1971, the State required cities and counties to include noise elements in their general plans (Government Code Section 65302 et seq.). The State of California General Plan Guidelines (Office of Planning and Research, 2015) identify guidelines for the noise elements of local general plans, including a sound level/land-use compatibility chart. The noise element guidelines identify the “normally acceptable” range of noise exposure for low-density residential uses as less than 60 dB Ldn, and the “conditionally acceptable” range as 55-70 dB Ldn. Overlapping noise level ranges are intended to indicate that local conditions (existing sound levels and community attitudes toward dominant sound sources) should be considered in evaluating land use compatibility at specific locations. The State’s guidance for land use/noise compatibility is summarized in Table NO-5.

Table NO-5: Land Use Noise Compatibility Guidelines

	Community Noise Exposure (CNEL / Ldn, dBA)			
Land Use Category	**Normally Acceptable[1]**	**Conditionally Acceptable[2]**	**Normally Unacceptable[3]**	**Clearly Unacceptable[4]**
Residential-Low Density Single-Family, Duplex, Mobile Home	< 60	55-70	70-75	75+
Residential-Multiple Family	< 65	60-70	70-75	75+
Transient Lodging, Motel, Hotel	< 65	60-70	70-80	80+
School, Library, Church, Hospital, Nursing Home	< 70	60-70	70-80	80+
Auditorium, Concert Hall, Amphitheater	-	< 70	65+	-
Sports Arenas, Outdoor Spectator Sports	-	< 75	70+	-
Playground, Neighborhood Park	< 70	-	67.5-75	72.5+
Golf Courses, Stable, Water Reclamation, Cemetery	< 75	-	70-80	80+
Office Building, Business Commercial and Professional	< 70	67.5–77.5	75+	-
Industrial, Manufacturing, Utilities, Agriculture	< 75	70-80	75+	-

Notes: CNEL = Community Noise Equivalent Level; dBA = A-weighted decibels; Ldn = day-night average noise level.

[1]Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

[2]New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

[3]New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.

[4]New construction or development should generally not be undertaken.

Source: Office of Planning and Research, 2015

CALIFORNIA DEPARTMENT OF TRANSPORTATION

For the protection of fragile, historic, and residential structures, Caltrans recommends for highway construction analysis a threshold of 0.2 in/sec PPV for normal residential buildings and 0.08 in/sec PPV for old or historically significant structures (Caltrans, 2013). These standards are more stringent than the recommended guidelines established by the FTA, presented above. Table NO-6 shows the general thresholds for structural responses to vibration levels.

Table NO-6: Structural Responses to Vibration Levels, Peak Vibration Threshold (in/sec PPV)

Structure and Conditions	**Peak Vibration Threshold (in/sec PPV)** **Transient Sources**	**Peak Vibration Threshold (in/sec PPV)** **Continuous/ Frequent Intermittent Sources**
Extremely fragile historical buildings, ruins, ancient monuments	0.12	0.08
Fragile Buildings	0.2	0.1
Historic and Some Old Buildings	0.5	0.25
Older Residential Structures	0.5	0.3
New Residential Structures	1.0	0.5
Modern Industrial / Commercial Buildings	2.0	0.5

Notes:
in / sec -= inches per second;
PPV = peak particle velocity

Source: Caltrans, 2020.

CRITERIA FOR ACCEPTABLE VIBRATION EXPOSURE

Sacramento County has no adopted vibration standards. As a result, Caltrans-recommended criteria are applied for this project, as described below. Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. The Caltrans publication, Transportation and Construction

Vibration Guidance Manual, April 2020, provides guidelines for acceptable vibration limits for transportation and construction projects in terms of the induced PPV. Those standards are reproduced below in Table NO-7.

Table NO-7: Vibration Criteria

Human Response	Maximum PPV (in / sec) Transient Sources	Maximum PPV (in / sec) Continuous / Frequent Intermittent Sources
Barely Perceptible	0.04	0.01
Distinctly Perceptible	0.25	0.04
Strongly Perceptible	0.9	0.10
Severe	2.0	0.4
Notes: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous / frequent intermittent sources include impact pile drivers; pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.		

Current Caltrans research illustrates that there are different thresholds of perception for different types of vibration sources. Section XI(b) of Appendix G of the CEQA guidelines requires that a project results in exposure of persons to, or generation of, *excessive* groundborne vibration levels or groundborne noise levels, for the finding of a significant impact. The CEQA guidelines specifically mention “excessive” vibration, rather than just perceptible vibration.

The general range at which vibration becomes distinctly to strongly perceptible to people is noted in Table NO-1 as being 0.04-0.10 in/sec PPV for continuous or frequent sources. Similarly, damage to structures is considered likely at 0.25 in/sec PPV.

LOCAL

COUNTY OF SACRAMENTO GENERAL PLAN

The Sacramento County General Plan serves as the overall guiding policy document for land use, development, and environmental quality for the County. Sacramento County Noise Element of the General Plan contains noise standards for transportation as well as non-transportation or “stationary” noise sources. The non-transportation criteria, shown in Table NO-8, would apply to noise generated from the on-site heavy equipment construction activities of the proposed project. Satisfaction of the County’s exterior noise level standards would ensure compliance with interior noise level standards. This is because the interior noise level standards are 15–20 dB lower than the exterior noise level standards, and typical noise reduction for residential structures is 25 dB with windows in the closed position. Pursuant to footnote 3 of Table NO-8, noise level standards are applied with windows in the closed position. Therefore, provided exterior

noise levels do not exceed the Table NO-8 standards outside the nearest residences, noise levels inside the residences would be below the interior noise level standards shown in Table NO-8. As a result, this analysis focuses on the more restrictive exterior noise level standards.

The Noise Element of the Sacramento County 2030 General Plan (Chapter 7) contains the County's noise-related policies. The specific Noise Element policies which are generally applicable to this project are reproduced below:

NO-6: Where a project would consist of or include non-transportation noise sources, the noise generation of those sources shall be mitigated so as not to exceed the interior and exterior noise level standards of Table 2 of the Sacramento County General Plan Noise Element (Table NO-8) at existing noise-sensitive areas in the project vicinity.

NO-7: The "last use there" shall be responsible for noise mitigation. However, if a noise- generating use is proposed adjacent to lands zoned for uses which may have sensitivity to noise, then the noise-generating use shall be responsible for mitigating its noise generation to a state of compliance with Table 2 of the Noise Element (Table NO-8) standards at the property line of the generating use in anticipation of the future neighboring development.

NO-13: Where noise mitigation measures are required to satisfy the noise level standards of the Noise Element, emphasis shall be placed on the use of setbacks and site design to the extent feasible, prior to consideration of the use of noise barriers.

Table NO-8: Non-Transportation Noise Standards Sacramento County General Plan Noise Element

Receiving Land Use	**Outdoor Area Daytime (7 a.m. – 10 p.m.)**	**Outdoor Area Nighttime (10 p.m. – 7 a.m.)**	**Interior Day & Night**	**Notes**
All Residential	55 / 75	50 / 70	35 / 55	4
Transient Lodging	55 / 75	-	35 / 55	5, 6
Hospitals & Nursing Homes	55 / 75	-	35 / 55	6
Treaters & Auditoriums	--	-	30 / 50	6
Churches, Meeting Halls, Schools, Libraries, etc.	55 / 75	-	35 / 60	6
Office Buildings	60 / 75	-	45 / 65	6
Commercial Buildings	--	-	45 / 65	6
Playgrounds, Parks, etc.	65 / 75	-	--	6

Receiving Land Use	Outdoor Area Daytime (7 a.m. – 10 p.m.)	Outdoor Area Nighttime (10 p.m. – 7 a.m.)	Interior Day & Night	Notes
Industry	60 / 80	-	50 / 70	6

Notes:

Median (L_{50})/ Maximum (L_{max})

L_{50} = sound level exceeded by 50 percent of a specified period of time;

L_{max} = maximum sound level (the maximum instantaneous sound level during a specified period);

L_{eq} = equivalent or energy-averaged noise level.

- The Table 2 standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards of Table 1, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.
- Sensitive areas are defined in the acoustic terminology section.
- Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
- Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
- Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
- The outdoor activity areas of these uses (if any), are not typically used during nighttime hours.
- Where median (L50) noise level data is not available for a particular noise source, average (Leq) values may be substituted for the standards of this table provided the noise source in question operates for at least 30 minutes of an hour. If the source in question operates less than 30 minutes per hour, then the maximum noise level standards shown would apply.

Source: Sacramento County, 2011

COUNTY OF SACRAMENTO NOISE ORDINANCE

Section 6.68 of the Sacramento County Code (noise control) establishes standards for acceptable noise exposure at residential uses. Table NO-9 and Table NO-10 outline excerpts for noise standards from the County's Noise Control Ordinance. Regarding project construction activities, the Sacramento County Code Section 6.68.090 (Exemptions), quoted below, also provides that certain construction activities shall be exempted from the provisions of the Noise Ordinance.

SACRAMENTO COUNTY CODE SECTION 6.68.070

a. The following noise standards, unless otherwise specifically indicated in this chapter, shall apply to all properties within a designated noise area.

b. It is unlawful for any person at any location within the County to create any noise which causes the noise levels on an affected property, when measured in the designated noise area, to exceed for the duration of time set forth in Table NO-10, the specified exterior noise standards in any one hour.

c. Each of the noise limits specified in subdivision (b) of this section shall be reduced by five dBA for impulsive or simple tone noises, or for noises consisting of speech or music.

d. If the ambient noise level exceeds that permitted by any of the first four noise-limit categories specified in subdivision (b), the allowable noise limit shall be increased in five dB increments in each category to encompass the ambient noise level. If the ambient noise level exceeds the fifth noise level category, the maximum ambient noise level shall be the noise limit for that category.

Table NO-9: County of Sacramento Noise Control Ordinance

Noise Area	County Zoning Districts	Time Period	Exterior Noise Standard
1	RE-1. RD-1, RE-2, RD-2, RE-3, RD-3, RD-4, R-1-A, RD-5, R-2, RD-10, R-2A, RD-20, R-3, R-D-30, RD-40, RM-1, RM-2, A-1-B, AR-1, A-2, AR-2, A-5, AR-5	7 a.m. – 10 p.m.	55 dBA
1	RE-1. RD-1, RE-2, RD-2, RE-3, RD-3, RD-4, R-1-A, RD-5, R-2, RD-10, R-2A, RD-20, R-3, R-D-30, RD-40, RM-1, RM-2, A-1-B, AR-1, A-2, AR-2, A-5, AR-5	10 p.m. – 7 a.m.	50 dBA
Source: Sacramento County Code, Section 6.68.070(a)			

Table NO-10: Sacramento County Decibel Allowance Relative to Cumulative Intrusive Sound Duration

Cumulative Duration of the Intrusive Sound	Allowance Decibels
Cumulative period of 30 minutes per hour	0
Cumulative period of 15 minutes per hour	+5
Cumulative period of 5 minutes per hour	+10
Cumulative period of 1 minute per hour	+15
Level not to be exceeded for any time per hour	+20
Source: Sacramento County Code, Section 6.68.070(b)	

SACRAMENTO COUNTY CODE, SECTION 6.68.090

Pertinent to this project, the Sacramento County Noise Ordinance, specifically Section 6.68.090(e), exempts certain construction activities:

a. Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided said activities do not take place

between the hours of eight p.m. and six a.m. on weekdays and Friday commencing at eight p.m. through and including seven a.m. on Saturday; Saturdays commencing at eight p.m. through and including seven a.m. on the next following Sunday and on each Sunday after the hour of eight p.m. Provided, however, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after eight p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

Sacramento County Zoning Code

The Sacramento County Zoning Code (Zoning Code) implements the land use policies of the County. The Zoning Code ensures development conforms to these policies by regulating land use and providing development standards.

Section 4.8 of the Zoning Code specifically pertains to surface mining operations within unincorporated Sacramento County. Zoning Code Section 4.8.12, Operating Standards for Aggregate Mining Operations, states all aggregate mining operations, including sand and gravel mines, hard rock quarries and dredger tailings mining operations, shall be subject to the requirements in this section.

Section 4.8.11.F. Noise Data

The application must include a plan indicating the anticipated noise contour levels on the mining site and adjacent properties along with the measures proposed to control the noise. When mining, processing, and related activities are planned to occur within 500 feet of a habitable structure and/or potentially incompatible use, the mining operator shall provide to the County a noise monitoring program prepared by a qualified acoustical consultant (chosen from a list provided by Planning and Environmental Review). The study area radius of the noise monitoring program shall be increased to 1,000 feet if habitable structures and/or potentially incompatible uses are on land with either Agricultural or Agricultural-Residential zoning. The program will be used to evaluate the effectiveness of mitigation measures in reducing noise levels to comply with applicable noise ordinances. A qualified consultant shall test noise levels during the removal of overburden, the extraction of aggregates and the backfill of overburden as they occur at abutting residential boundaries. The owners of habitable structures and/or potentially incompatible uses included in the study area shall be notified when testing is to occur. Further testing may not be required if the consultant determines the mitigation measures are successful in achieving the required noise reduction. If testing indicates that noise standards are exceeded, the testing results shall be reported to the County and additional mitigation measures will be required.

Section 4.8.12.A. Operating Hours

The operating standards for aggregate mining operations are codified in the Zoning Code Section 4.8.12.A. Operating Hours which is provided below:

Note: Unless otherwise provided as a condition of use permit the hours of operation of mining, processing, maintenance, and related activities shall be as set forth in Sections 4.8.12.A.1 and 4.8.12.A.2.

1. When mining, processing, and related activities occur within 1,000 feet of a habitable structure and/or potentially incompatible use on land zoned Agricultural or Agricultural-Residential, or within 500 feet from a habitable structure and/ or potentially incompatible uses in all other zones, or are otherwise provided as a condition of use permit, then the hours of operation of mining, processing and related activities, including haul out, shall be:
    a. Monday through Friday, inclusive: 6:00 a.m. until 9:00 p.m.; maintenance operations beyond mining hours to occur from 9:00 p.m. to midnight.
    b. Saturday: 7:00 a.m. through 3:00 p.m.; maintenance operations beyond mining hours to occur from 3:00 p.m. to 4:00 p.m.
    c. Sunday and any federal/ state holidays: no mining, processing, hauling or maintenance permitted.
2. For all parcels not subject to Section 4.8.12.A.1, the hours of operation of mining, processing, maintenance, and related activities, including haul out, shall be:
    a. Monday through Friday, inclusive: 6:00 a.m. until 10:00 p.m.; maintenance operations beyond mining hours to occur from 10:00 p.m. to 6:00 a.m.
    b. Saturday: 6:00 a.m. through 3:00 p.m.; maintenance operations beyond mining hours to occur from 3:00 p.m. to 10:00 p.m.
    c. Sunday and any federal/ state holidays: no mining, processing, hauling or maintenance permitted.
3. Extension of Operating and Haul Out Hours. The use permit may specify hours of operation and haul out exceeding the hours set forth in Sections 4.8.12.A.1 and 4.8.12.A.2 for specified activities including haul out, basic uses, and ancillary uses, but not including mining. Any extension of hours through the use permit shall specify the use(s) and the hours, and may specify the circumstances required for using the extended hours and/or the number of days annually that the extended hours may be used.

RANCHO CORDOVA GENERAL PLAN

The Noise Element of the Rancho Cordova General Plan (Character 8) contains the City's noise-related policies. The specific policies which are generally applicable to this project are reproduced below.

POLICY N.1.1

Establish standards and policies consistent with those in Table NO-11 (Noise Element Table N-1) to govern maximum sound levels in new development.

POLICY N.1.3

Ensure that proposed non-residential land uses likely to exceed the City's standards do not create noise disturbances in existing noise-sensitive areas.

POLICY N.1.4

Mitigate noise created by proposed non-transportation noise sources to comply with the City's noise standards to the maximum extent feasible.

Table NO-11: Noise Level Performance Standards for New Projects Affected by or Including Non-Transportation Noise Sources

Stationary Noise Source	Noise Level Descriptor	Daytime (7 a.m. – 10 p.m.)	Nighttime (10 p.m. – 7 a.m.)
Typical	Hourly Leq, dB	55	45
Tonal, Impulsive, Repetitive, or Consistent	Hourly Leq, dB	50	40
The City may impose noise level standards which are more or less restrictive than those specified above based upon determination of existing low or high ambient noise levels.			
Source: Rancho Cordova General Plan, Noise Element, Table N-1			

RANCHO CORDOVA MUNICIPAL CODE

Chapter 6.68 of the Rancho Cordova Municipal Code (Noise Control) contains the City's noise-related ordinances. The specific ordinances which are generally applicable to this project are reproduced below:

6.68.070 EXTERIOR NOISE STANDARDS

The following noise standards, unless otherwise specifically indicated in this chapter, shall apply to all properties within a designated noise area.

Table NO-12: City of Rancho Cordova Noise Ordinance

Noise Area	City Zoning Districts	Time Period	Exterior Noise Standard
1	RE-1, RD-1, RE-2, RD-2, RE-3, RD-3, RD-4, R1-A, RD-5, R-2, RD-10, R-2A, RD-20, R-3, RD-30, RD-40, RM-1, RM-2, A-1-B, AR-1, A-2, AR-2, A-5, AR-5	7 a.m. – 10 p.m.	55 dBA
1	RE-1, RD-1, RE-2, RD-2, RE-3, RD-3, RD-4, R1-A, RD-5, R-2, RD-10, R-2A, RD-20, R-3, RD-30, RD-40, RM-1, RM-2, A-1-B, AR-1, A-2, AR-2, A-5, AR-5	10 p.m. – 7 a.m.	50 dBA
Source: Rancho Cordova Municipal Code, Section 6.68.070(a)			

Table NO-13: City of Rancho Cordova Decibel Allowance Relative to Cumulative Intrusive Sound Duration

Cumulative Duration of the Intrusive Sound	Allowance Decibels
Cumulative period of 30 minutes per hour	0
Cumulative period of 15 minutes per hour	+5
Cumulative period of 5 minutes per hour	+10
Cumulative period of 1 minute per hour	+15
Level not to be exceeded for any time per hour	+20
Source: Rancho Cordova Municipal Code, Section 6.68.070(b)	

Each of the noise limits specified in subsection (b) of this section shall be reduced by five dBA for impulsive or simple tone noises, or for noises consisting of speech or music.

If the ambient noise level exceeds that permitted by any of the first four noise-limit categories specified in subdivision (b) (Table NO-13), the allowable noise limit shall be increased in five dBA increments in each category to encompass the ambient noise level. If the ambient noise level exceeds the fifth noise level category, the maximum ambient noise level shall be the noise limit for that category.

Folsom 2035 General Plan

The Safety and Noise Element of the Folsom 2035 General Plan (Chapter 9) contains the City's noise-related goals and policies. The specific goals and policies which are generally applicable to this project are reproduced below:

Goal SN 6.1.1 – Noise Mitigation Strategies

Develop, maintain, and implement strategies to abate and avoid excessive noise exposure in the City by requiring that effective noise mitigation measures be incorporated into the design of new noise-generating and new noise-sensitive land uses.

Goal SN 6.1.2 – Noise Mitigation Measures

Require effective noise mitigation for new development of residential or other noise-sensitive land uses to reduce noise levels as follows:

1. For noise due to traffic on public roadways, railroad line operations, and aircraft: achieve compliance with the performance standards within Table NO-14 (Safety and Noise Element Table SN-1).

2. For non-transportation-related noise sources: achieve compliance with the performance standards contained within Table NO-15 (Safety and Noise Element Table SN-2).

3. If compliance with the adopted standards and policies of the Safety and Noise Element will not be achieved, even with feasible mitigation measures, a statement of overriding considerations for the project must be provided.

It should be noted that Table SN-3 of the Folsom 2035 General Plan Safety and Noise Element contains vibration standards that would be applicable to project operations. Specifically, Table SN-3 contains adopted vibration impact criteria developed by the FTA. However, because the FTA vibration impact criteria contained in Table SN-3 is identical to the FTA criteria presented previously in this report, it is not reproduced in this section.

Table NO-14: Folsom Noise Compatibility Standards for Transportation Noise Sources

Land Use	**Exterior Noise Level Standard for Outdoor Activity Areas[1]** **L_{dn} / CNEL (dB)**	**Interior Noise Level Standard** **L_{dn} / CNEL (dB)**	**Interior Noise Level Standard** **L_{eq} (dB)[2]**
Residential (Low Density)[3]	60	45	N/A
Residential (Multi-Family)[3]	65	45	N/A
Transient Lodging[3]	65	45	N/A
Mixed-Use Developments	70	45	N/A
Schools, Libraries, Churches, Hospitals, Nursing Homes, Museums	70	45	N/A
Theaters, Auditoriums	70	N/A	35
Playgrounds, Neighborhood Parks	70	N/A	N/A
Golf Courses, Recreation	75	N/A	N/A
Office Buildings, Commercial, Professional	70	N/A	45
Industrial, Manufacturing, Utilities	75	N/A	45

Where a proposed use is not specifically on this table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the Community Development Department.

[1]Outdoor activity areas for residential developments are considered to be the backyard patios or decks of single-family residential units, and the patios or common areas where people generally congregate for multi-family development. Outdoor activity areas for non-residential developments are considered to be those common areas is where people generally congregate, including outdoor seating areas. Where

Land Use	Exterior Noise Level Standard for Outdoor Activity Areas[1] L_{dn} / CNEL (dB)	Interior Noise Level Standard L_{dn} / CNEL (dB)	Interior Noise Level Standard L_{eq} (dB)[2]
the location of outdoor activity areas is unknown, the exterior noise standard shall be applied to the property line of the receiving use. [2]As determined for a typical worst-case hour during periods of use. [3]Where it is not possible to reduce noise in outdoor activity areas to 6 dB Ldn / CNEL or less using practical application of the best-available noise reduction measures, an exterior noise level standard of 65 dB Ldn / CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table. Source: Folsom 2035 General Plan, Safety and Noise Element, Table SN-1			

Table NO-15: Folsom Noise Level Standards for Stationary Noise Sources

Noise Level Descriptor	Daytime (7 a.m. – 10 p.m.)	Nighttime (10 p.m. – 7 a.m.)
Hourly L_{eq}, dB	55	45
Maximum Level (L_{max}), dB	70	65
Noise levels are measured at the property line of the noise-sensitive use. Source: Folsom 2035 General Plan, Safety and Noise Element, Table SN-2		

FOLSOM MUNICIPAL CODE

Chapter 8.42 of the Folsom Municipal Code (Noise Control) contains the city's noise related ordinances. The specific ordinances which are generally applicable to this project are reproduced below:

8.42.40 – EXTERIOR NOISE STANDARDS

It is unlawful for any person at any location within the incorporated area of the city to create any noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any affected single- or multi-family residence, school, church, hospital or public library situated in either the incorporated or unincorporated area to exceed the noise level standards set forth in Table NO-16 below.

In the event the measured ambient noise level exceeds the applicable noise level standard in any category below, the applicable standard shall be adjusted so as to equal the ambient noise level.

Each of the noise level standards specified above shall be reduced by 5 dB(A) for simple tone noises, noises consisting primarily of speech or music, or for recurring noises.

If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be the noise level standards as specified below.

Table NO-16: City of Folsom Exterior Noise Level Standards

Noise Level Category	Cumulative Number of Minutes in Any 1-Hour Time Period	dBA Daytime (7 a.m. – 10 p.m.)	dBA Nighttime (10 p.m. – 7 a.m.)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65
Source: Folsom Municipal Code, Chapter 8.42.040, Table 8.42.040			

SIGNIFICANCE CRITERIA AND METHODOLOGY

SIGNIFICANCE CRITERIA

Based on the CEQA Guidelines, a noise impact is significant if the project results in any of the following:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Generation of excessive groundborne vibration or groundborne noise levels.
- For a project within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

METHODOLOGY

The following noise analysis relies upon the Environmental Noise Assessment prepared by Bollard Acoustical Consultants, Inc. (Bollard), found in Appendix NO-1 of this EIR. To generally quantify existing ambient noise conditions in the project vicinity, Bollard conducted long-term (96-hour) ambient noise level measurements at five (5) locations from November 13-16, 2020. The long-term noise survey locations are shown on Plate NO-2.

The noise standards of Sacramento County, city of Rancho Cordova, and the city of Folsom which are applicable at noise-sensitive uses are all equivalent within 5 dB. The

Sacramento County mining ordinance also applies standards at the mine site boundary. Table NO-17 provides a summary of the noise standards of the various jurisdictions.

Each of the local jurisdictions (Sacramento County, City of Rancho Cordova, City of Folsom), apply offsets to their noise standards in cases where existing ambient levels exceed that jurisdictions' noise criteria. With the exception of Monitoring Site 5, which was located in relatively close proximity to Prairie City Road, the measured ambient average and maximum noise levels in the vicinity of future residential developments were generally at or below the established noise standards shown below in Table NO-17. As a result, no offsets to the locally adopted noise standards are applied to this assessment.

Table NO-17: Exterior Noise Standards Applicable to the Project

Jurisdiction	Location Where Standards are Applicable	Noise Metric	Time Period	Noise Standards, dBA
Sacramento County	Sensitive Use	L_{dn}	24 Hour	65
	Sensitive Use	L_{50} / L_{max}	Daytime	55 / 75
	Sensitive Use	L_{50} / L_{max}	Nighttime	50 / 70
	Property Line of Mine Site	L_{50} / L_{max}	6 a.m. – 10 p.m.	70 / 90
Rancho Cordova	Sensitive Use	L_{dn}	24 Hour	60
	Sensitive Use	L_{50} / L_{max}	Daytime	55 / 75
	Sensitive Use	L_{50} / L_{max}	Nighttime	50 / 65
Folsom	Sensitive Use	L_{dn}	24 Hour	60
	Sensitive Use	L_{50} / L_{max}	Daytime	50 / 70
	Sensitive Use	L_{50} / L_{max}	Nighttime	45 / 65
Sources: Sacramento County General Plan, Noise Ordinance & Mining Ordinance. Cities of Folsom and Rancho Cordova General Plans and Municipal Codes.				

IMPACTS NOT DISCUSSED FURTHER

CONSTRUCTION NOISE

Construction activities associated with the project consist of installation of the conveyor and associated undercrossing at White Rock Road. Construction activities would be short term, occur during daytime hours, and with standard construction equipment. There are no sensitive uses in the proximity of the undercrossing and offsite conveyor that would be affected by the short term construction activities. Additionally,

construction noise is exempt under the County noise ordinance when performed during daytime hours. For these reasons, further analysis of construction noise is not included.

PROXIMITY TO AIRPORT USES

For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

The project site is located approximately three miles northeast of Mather Airfield. A small portion of the site is located between the 60 dB and 65 dB noise contours. Operations would not expose workers in the project area to excessive aircraft noise.

IMPACTS AND ANALYSIS

IMPACTS

IMPACT NO -1: WOULD THE PROJECT RESULT IN GENERATION OF A SUBSTANTIAL TEMPORARY OR PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN THE VICINITY OF THE PROJECT IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL NOISE ORDINANCE, OR APPLICABLE STANDARDS OF OTHER AGENCIES?

NOISE IMPACTS ASSOCIATED WITH PROPOSED ON-SITE EXTRACTION

On-site equipment to be used for project extraction activities would consist of front-loaders, a water truck, motor graders, bulldozers, self-elevating scrapers, and electric conveyors. Table NO-18 shows the reference noise levels corresponding to the equipment proposed for use at the project site. These noise levels were obtained from Bollard noise level measurements conducted at various similar aggregate mining locations in recent years

Table NO-18: Extraction Noise-Producing Equipment and Associated Noise Emission Levels

Equipment Type	Maximum (L_{max})	Median (L_{50})
Excavating Equipment (Combinations of loaders, scrapers, dozers, graders, and water trucks)	85	70
Electric Conveyors	65	60
Note: Median noise levels represent any one-hour period and assume continuous operation of the extraction equipment. *L_{max} and L_{50} = Approximate noise level, dBA at 50 feet reference distance*		

SACRAMENTO COUNTY MINING ORDINANCE CONSISTENCY

The Sacramento County Zoning Code Section 4.8.16.A requires a requires a minimum setback of 5 feet from a property line not adjacent to a public street right-of-way and 50 feet from all public street right-of-ways.

The Sacramento County Zoning Code Section 4.8.12.E applies a 70 dB L_{50} standard, a 75 dB L02, and a 90 dB L_{max} standard to the property line of the mine site. Based on the reference sound levels reported in Table NO-17, a property line setback of 25 feet would be required to ensure compliance with the 90 dB Lmax standard and a setback of 50 feet would be required to ensure compliance with the 70 dB L_{50} property line noise standard. Due to the considerably lower noise emissions of the electric conveyor system, no property line setbacks would be required of that equipment. Mitigation Measure NO-1 requires a 50-foot setback from property lines and has been applied to this project to ensure compliance with the Sacramento County noise thresholds outlined in Zoning Code Section 4.8.12.E.

ON-SITE EXTRACTION

EXISTING SENSITIVE USES

Table NO-17 indicates that the hourly noise standards which are applicable at sensitive land uses, (not mining site boundaries), range from 50 to 55 dB L_{50}/L_{eq}, and 70-75 dB L_{max}, during daytime hours. The Project is requesting to operate up to 24 hours per day, 299 days per year. Operations would occur Monday through Saturday, year-round excluding 13 state and federal holidays.

The proposed operational hours are different from operational hours allowed by the Sacramento County Zoning Code Section 4.8.12.A, which limits mining hours to Monday through Friday 6 am to 10 pm, and Saturdays from 6 am to 3 pm, with extended hours allowed for maintenance.

The nearest existing sensitive receptors (residences) are located approximately 9,000 feet south of the project area (Somerset Ranch vicinity) and 4,000 feet north (residences on north side of Highway 50 along Iron Point Road). At those distances, project extraction noise levels would be reduced to less than 30 dB L_{50}/L_{eq} and less than 40 dB L_{max} based on spherical spreading of sound (6 dB decrease per doubling of distance) and atmospheric absorption (1.5 dB decrease per thousand feet for standard day conditions). These levels, which would be considerably lower still after accounting for shielding by intervening topography, are well below the most restrictive 50 dB L_{50}/L_{eq} and 70 dB L_{max} noise standards which would be applicable to the project. As a result, extraction noise levels at the nearest existing sensitive receptors are predicted to be ***less than significant.***

FUTURE RESIDENTIAL SENSITIVE USES

There are several future residential uses proposed adjacent to and near the project site (reference Plate NO-3). The timing of development is unknown at this time, but existing planning entitlements would allow development in unincorporated Sacramento County, the city of Folsom, and in the city of Rancho Cordova. If residences were constructed and occupied during mining activities, it may be necessary to implement noise mitigation measures to ensure compliance with the jurisdictional noise requirements.

Using the reference sound levels contained in Table NO-17, extraction noise levels were projected to the locations of the nearest proposed residential developments surrounding the mining area. The projections were based on standard spreading of

sound with distance (6 dBA decrease for each doubling of distance from the source) plus atmospheric absorption (1.5 dBA decrease per thousand feet). No offsets for intervening topography or structures were included in the projections. The results of those projections are provided in Table NO-19. Table NO-19 also shows the daytime and nighttime noise standards applicable within each jurisdiction as well as whether or not those standards are predicted to be exceeded.

Plate NO-3: Future Nearby Residential Development Areas

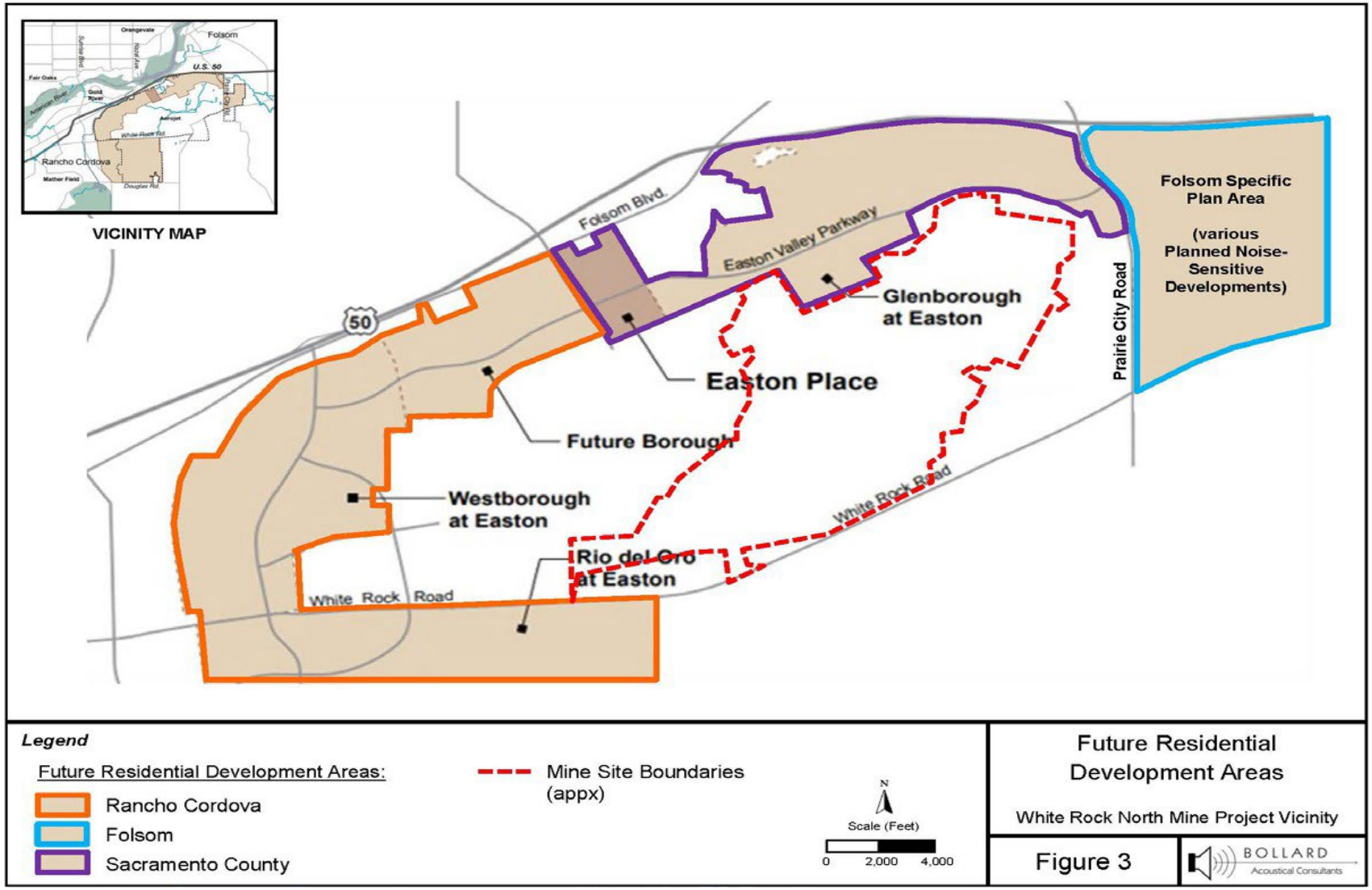


Table NO-19: Predicted Estimated Noise Levels at Nearest Proposed Future Residential Use

			Predicted Level		Noise Standard Daytime		Noise Standard Nighttime		Standards Exceeded? Daytime		Standards Exceeded? Nighttime	
Jurisdiction	**Location**	**Distance (ft)**	**L_{max}**	**L_{50}/L_{eq}**	**L_{max}**	**L_{50}/L_{eq}**	**L_{max}**	**L_{50}/L_{eq}**	**L_{max}**	**L_{50}/L_{eq}**	**L_{max}**	**L_{50}/L_{eq}**
Rancho Cordova	Westborough at Easton at Easton	3,700	42	27	75	55	65	50	No	No	No	No
Rancho Cordova	Rio Del Oro at Easton	1,500	53	38	75	55	65	50	No	No	No	No
Sacramento County	Easton Place	1,800	51	36	75	55	70	50	No	No	No	No
Sacramento County	Glenborough at Easton	50	85	70	75	55	70	50	**Yes**	**Yes**	**Yes**	**Yes**
Folsom	Nearest Folsom Specific Plan Area Residential Projects	2,400	48	33	70	50	65	45	No	No	No	No

1. *Plate NO-3 shows the locations of the proposed future residential uses relative to the White Rock North Mining area.*
2. *The approximate distance from the nearest point within the proposed residential developments to the proposed mining area.*
3. *Cells in RED denote exceedance of the applicable noise standards.*

As indicated in Table NO-19, extraction noise levels at five of the six proposed residential developments surrounding the project site are predicted to be satisfactory with the applicable local noise level standards during both daytime and nighttime periods. As a result, no additional noise mitigation would be required of the project for those five developments.

UNINCORPORATED SACRAMENTO COUNTY OF SACRAMENTO

The two nearest, future residential developments in the unincorporated County are Easton Place and Glenborough at Easton. As indicated in Table NO-19, Easton Place is located approximately 1,800 feet from the Project area and would not exceed County daytime or nighttime noise standards.

The Glenborough site is located approximately 50 feet from the northern Project boundary. The predicted Lmax is 85 dB which exceeds the daytime standard by 10 dB and the nighttime standard by 15 dB. The predicted L_{50}/L_{eq} is 70 dB, which exceeds the daytime standard by 15 dB and the nighttime standard by 20 dB. Excessive noise levels at residential uses would be considered a significant impact.

If certificates of occupancy were issued for future residences at Easton Place, the project would need to implement noise level reductions ranging from 15 to 20 dBA during daytime and nighttime periods, respectively. This degree of attenuation could be achieved through the use of increased setbacks, construction of temporary barriers (or earthen berms), or a combination of the two. Mitigation Measure NO-2 would require the project proponent to prepare a noise control plan prior to conducting nighttime extraction activities within 500 feet of a residential activity area or within 280 feet of the same use during daytime hours.

Impacts would be ***less than significant with mitigation***.

CITY OF RANCHO CORDOVA

There are two developments within the city of Rancho Cordova that are near the project site – Westborough at Easton (pending) and Rio del Oro at Easton (approved). Rio del Oro is the closest future development and is located approximately 1,500 feet from the proposed project. For future development within the city of Rancho Cordova the applicable daytime noise level limits would be 55 dB L_{50} and 75 dB L_{max} at the outdoor activity areas of those future residences. As shown in Table NO-19, predicted levels would not exceed Rancho Cordova's daytime nor nighttime noise standards. No mitigation measures would be required. Impacts are ***less than significant.***

CITY OF FOLSOM

Future residential development within the City of Folsom (on the east side of Prairie City Road), would be setback at least 2,400 feet from the proposed extraction area. At that distance, the reference extraction levels shown in Table NO-19 would be reduced to 33 dB L50 and 48 Lmax. Because these levels are well below Folsom's exterior noise standards applicable to residential uses, no mitigation measures would be required, impacts are ***less than significant***.

Impact NO-2: Would the project result in the generation of excessive groundborne vibration or groundborne noise levels?

Table NO-20 shows reference PPV vibration levels for the types of heavy earthmoving equipment utilized at the project site. The data in Table NO-20 is provided in terms of both PPV and VdB at a reference distance of 25 feet.

Table NO-20: Vibration Levels of Earthmoving Equipment – 25-foot Reference Distance

Noise Source	PPV (in / sec)	RMS Velocity in Decibels (VdB)
Water Trucks	0.001	57
Scraper	0.002	58
Bulldozer – Small	0.003	58
Backhoe	0.051	82
Excavator	0.051	82
Grader	0.051	82
Loader	0.051	82
Loaded Trucks	0.076	86
Bulldozer – Large	0.089	87
Source: Bollard Acoustical Consultants, Inc.		

The nearest future residences (Glenborough) would be approximately 50 feet from the northern project boundary. To the project the vibration levels from the reference distance of 25 feet shown in Table NO-19 to the nearest residence, the following formula was applied:

PPV = PPV ref * (25 / D)n (inches / second)

Where:

PPV = Desired vibration level at receptor located D feet from the vibration source

D = Distance from vibration source to sensitive receptor (feet)

n = Vibration attenuation rate through ground.

According to Chapter 12 of the FTA Transit Noise and Vibration Impact Assessment (FTA, 2006) manual, and “n” value of 1.5 is recommended to calculate vibration propagation through typical soil conditions.

Using the formula provided above, the vibration level at the nearest future sensitive receptor located 50 feet from the project site ranges from 48 to 78 VdB dependent on the equipment being used. Vibration generated by a larger bulldozer (78 VdB) would exceed the 72 VdB threshold for annoyance to persons in residential settings. Although a vibration of 78 VdB is well below the 98 VdB threshold of structural damage to new construction homes, because it could exceed the 72 VdB threshold at future residential

locations, the impact is considered potentially significant. Mitigation Measure NO-4 would require a minimum 60-foot setback from residences for use of large bulldozers. Vibration impacts related to project operations are ***less than significant with mitigation***.

Mitigation Measures

Mitigation Measure NO-1: 50-Foot Extraction Setback

All extraction activities shall maintain a 50-foot setback distance from the mine site property line boundaries.

Mitigation Measure NO-2: Extraction Activities Near Sensitive Land Uses

If certificates of occupancy have been issued for residential or similar sensitive land uses in the Glenborough Easton Specific Plan area, then prior to conducting excavation activities within 280 feet of those uses during daytime hours (or within 500 feet for excavation activities during nighttime hours), then a focused noise-control plan shall be implemented to ensure satisfaction with the applicable noise standards of Sacramento County. The noise-control plan should take into consideration the relative distances and elevations of the residences and excavation areas, the number and types of equipment proposed for excavation activities, and the hours in which those activities would occur. The noise control plan shall demonstrate how the applicable noise standards shown in Table 11 will be achieved through incorporation of setbacks, berms / barriers, modifications to equipment and/or operations, etc.

Mitigation Measure NO-3: 60-Foot Bulldozer Setback

Extraction activities requiring bulldozers shall not occur within 60 feet of an existing residence. The setback must be maintained to comply with the vibration threshold of annoyance if the residential homes have been constructed and occupied.

13 TRIBAL CULTURAL RESOURCES

INTRODUCTION

This chapter describes the environmental and regulatory setting for tribal cultural resources (TCRs) in the project area, identifies and analyzes impacts to TCRs from implementation of the White Rock North Mine project (proposed project), and, if necessary, recommends mitigation measures to reduce or eliminate significant impacts. Tribal cultural resources are separate and distinct from cultural resources, which are discussed in Chapter 7, Cultural Resources.

Tribal cultural resources include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either listed on or determined to be eligible for inclusion on the California Register of Historical Resources (CRHR) or included in a local register of historical resources, or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant. Tribal cultural resources provide the backdrop to:

- Religious understanding;
- Traditional stories;
- Knowledge of resources, such as varying landscapes, bodies of water, animals and plants; and
- Self-identity.

Tribal cultural resources may contain physical cultural remains or may be places within a landscape. A cultural landscape that meets these criteria is a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. Historical resources, unique archaeological resources, or non-unique archaeological resources may also be TCRs if they meet these criteria.

ENVIRONMENTAL SETTING

Refer to the California Indigenous History section of Chapter 7, Cultural Resources, of this Draft EIR for an overview on Pre-Contact Native American history and subsequent land use history of the Project site. The following information contains the oral and ethnographic accounts of Indigenous culture, the means and methods by which TCRs are recognized and accounted.

ETHNOGRAPHIC CONTEXT

When the first European explorers entered the regions between 1772 and 1821, an estimated 100,000 people, about one third of the state's native population, lived in the

Central Valley (Moratto,1984). 20th century Anthropologists commonly grouped the native peoples of California by the known roots of their spoken language on the theory that language is relatively straight forward, and because peoples speaking the same language tend to have other cultural traits in common (Anderson, 2005). However, the bonds between people that share a language are often less important than those created by other sorts of relationships. This was especially true in most Native California, where the nature of trade, warfare, cooperation, and almost every other kind of interaction depended on whether the individuals involved belonged to the same sociopolitical group, not whether they spoke a common language (Anderson, 2005). At least seven distinct languages of Penutian stock were spoken among these populations: Wintu, Nomlaki, Konkow, River Patwin, Nisenan, Miwok, and Yokuts (Kroeber, 1925).

Common linguistic roots and similar cultural and technological characteristics indicate that these groups shared a long history of interaction (Rosenthal et al,. 2007). The Central area (as defined by Kroeber, 1925) encompasses the project area and includes the Nisenan or Southern Maidu (ECORP, 2021).

Ethnographically, the project site falls within the southwestern portion of the territory occupied by the Penutian-speaking Nisenan. Nisenan inhabited the drainages of the Yuba, Bear, and American Rivers, and the lower reaches of the Feather River, extending from the east banks of the Sacramento River on the west to the mid to high elevations of the western flank of the Sierra Nevada to the east (Wilson and Towne, 1978). The territory extended from the area surrounding the current City of Oroville on the north to a few miles south of the American River in the south. The Sacramento River bounded the territory on the west, and, in the east, it extended to a general area located within a few miles of Lake Tahoe (ECORP, 2021).

Prior to contact, many language groups, particularly in north central California, were subdivided into politically and economically independent groups consisting of several unrelated families that collectively owned and defended a specific tract of land. Alfred Kroeber called these groups “village communities” or “tribelets”. Nisenan (meaning “from among us” or “of our side”) are members of the Maiduan Family of the Penutian stock and are generally divided into three groups based on dialect differences: the Northern Hill (mountain) Nisenan in the Yuba River drainage; the Valley Nisenan along the Sacramento River; and the Southern Hill (foothills) Nisenan along the American River (Beals 1933; Kroeber, 1925; Wilson and Towne, 1978). Individual and extended families owned hunting and gathering grounds, and trespassing was discouraged (Kroeber, 1925; Wilson and Towne, 1978). Residence was generally patrilocal, but couples maintained choice in the matter (Wilson and Towne, 1978).

Tribelet chiefs tend to be hereditary, with the chieftainship being the property of a single patrilineage within the tribelet. Tribelet populations of Valley Nisenan were as large as 500 people (Wilson and Towne, 1982), while foothill and mountain tribelets ranged between 100 persons and 300 persons (Levy, 1978; Littlejohn, 1928). Each tribelet owned a bounded tract of land and exercised control over its natural resources (Littlejohn, 1928). Beals (1933) estimated that Nisenan tribelet territories averaged approximately 10 miles along each boundary, or 100 square miles, with foothill

territories tending to encompass more area than mountain territories. Littlejohn (1928) noted that in many instances, these boundaries were indicated by piles of stones. Regardless, Nisenan groups tended to stay within their village areas except during the summer season when groups of people would sojourn into the mountains to hunt and gather (Littlejohn, 1928).

The basic social and economic group for the Nisenan was and is the family or household unit. The nuclear and extended family usually lived in proximity to each other as a group. These family units were combined into distinct village or hamlet groups, each largely composed of consanguine relatives (Beals, 1933; Littlejohn, 1928). Lineage groups were important political and economic units that combined to form tribelets, which were the largest socio-political unit identified for Nisenan (Wilson and Towne, 1978). Villages typically included family dwellings, acorn granaries, a sweathouse, and a dance house, owned by the chief (ECORP, 2021).

Indigenous Lifeways

Nisenan practiced seasonal migration, a subsistence strategy involving moving from one area or elevation to another to harvest plants, fish, and hunt game across contrasting ecosystems that were relatively close. Valley Nisenan generally did not range beyond the valley and lower foothills, while foothill and mountain groups ranged across a more extensive area that included jointly shared territory whose entry was subject to traditional understandings of priority of ownership and current relations between the groups (d'Azevedo, 1963).

During most of the year, Nisenan usually lived in permanent villages located below about 2,500 feet elevation that generally had a southern exposure, were surrounded by an open area, and were located above, but close to watercourses (Littlejohn, 1928). The rather large uninhabited region between the 3,000-foot contour and the summit of the Sierra Nevada was considered open ground which was only used by communities living along its edge (Littlejohn, 1928:20). Beals (1933) noted that permanent villages in the foothills and mountains were usually located on high ground between rivers. Valley villages were also usually located on raised areas to avoid flooding. Littlejohn (1928) stated that at one time or another there were settlements located on every small stream within Nisenan territory, but permanent villages were not located in steep, dark, narrow canyons of large rivers, or at altitudes where deep snow persisted throughout the winter. In fact, permanent occupation sites above 3,500 feet elevation were only located in protected valleys (Littlejohn, 1928).

Nisenan built residential dwellings, ceremonial structures, semi-subterranean sweat lodges, and menstruation huts (Wilson and Towne, 1978). The typical hill-and-mountain dwelling was the conical bark house made by overlapping three or four layers of bark with no interior support. A thatched house was used at lower elevations, consisting of a conical framework of poles that was covered by brush, grass, or tules. Semi-subterranean earth lodge roundhouses were also built by hill and mountain groups and used for ceremonial gatherings, assemblies, local feasts, and for housing visitors (Beals, 1933; Levy, 1978).

Flaked stone and groundstone tools were common among the Nisenan and included knives, arrow and spear points, club heads, arrow straighteners, scrapers, rough cobble and shaped pestles, bedrock mortars, grinding stones (metates), pipes, charms, and short spears (Barrett 1917; Beals 1933; Voegelin 1942; Wilson and Towne 1978). Beals (1933:341) also noted that certain colored stone points were considered lucky and could be traded for four or five other projectile points. In addition, obsidian was highly valued and imported. Nisenan informants stated that obsidian only came from a place to the north, outside of Nisenan territory (Littlejohn, 1928:32). Littlejohn (1928) also noted that soapstone was used for bowl mortars, although informants of Wilson and Towne (1978) claimed that neither they nor their ancestors made mortars (ECORP, 2021).

Wood was used for a variety of tools and weapons, including both simple and sinew-backed bows, arrow shafts and points, looped stirring sticks, flat-bladed mush paddles, pipes, and hide preparation tools (Wilson and Towne, 1978). Cordage was made from plant material and used to construct fishing nets and braided and twined tumplines.

Soaproot brushes were commonly used during grinding activities to collect meal or flour. Specialized food processing and cooking techniques included the grinding and leaching of ground acorn and buckeye meal; burning of umbelliferae, a plant with cabbage-like leaves, to obtain salt; and roasting various foods in earth ovens (d'Azevedo, 1986; Wilson and Towne, 1978). Both hill and valley groups used the bedrock mortar and pestle (both rough cobble and shaped) to grind acorns, pine nuts, seeds, other plant foods, and meat. A soaproot brush was used to sweep ground meal into mortar cups and collect flour. Fist-sized, heated stones were used to cook or warm liquid-based foods, such as acorn gruel and pine nut meal. Whole acorns were stored in granaries, and pine nuts were stored in large pine bough-covered caches (Wilson and Towne, 1978).

Nisenan used baskets for a variety of tasks, including storage, cooking, traps, cradles, hats, cages, serving and processing foods, seed beaters, and winnowing trays. Basket manufacturing techniques included both twining and coiling, and baskets were decorated with a variety of materials and designs. Other woven artifacts include material made of tule, milkweed, sage fibers, or wild hemp (Wilson and Towne, 1978).

Ecology and People

The first European explorers and American trappers entering the Sacramento Valley described the landscape as one providing nourishment through mild gathering and easy hunting with game aplenty (Wilson and Towne, 1978), and the availability of resources influenced the location of Nisenan permanent villages, since they acquired a proportion of their food resources from the surrounding general area (Littlejohn, 1928; Wilson and Towne, 1978). Juan Jose Warner, who traveled through the San Joaquin Valley during the winter of 1832-33 noted, "The banks of the Sacramento and San Joaquin, and the numerous tributaries of these rivers, and the Tule Lake [probably Tulare Lake], were at this time studded with Indian villages…the population of this extensive valley was so great that it caused surprise, and required a close investigation into the nature of a country that without cultivation, could afford the means of subsistence to so great a community."

In actuality, the productive and diverse landscapes were part the outcome of sophisticated and complex harvesting and management practices (Anderson, 2005). The Nisenan protected and tended favored plant species and habitats, harvested plant and animal products at carefully calculated frequencies and intensities, and practiced an array of horticultural techniques. Through coppicing, pruning, harrowing, sowing, weeding, burning, digging, thinning, and selective harvesting, they influenced desired characteristics increased populations of useful plants, and altered the structures and compositions of plant communities (Anderson, 2005).

Nisenan groups managed many wild plants, primarily by controlled burning which removed underbrush and encouraged growth of edible grasses, seed-producing plants, and other useful plant resources (e.g., basketry materials) (Blackburn and Anderson, 1993). The use of fire for environmental modification and as an aid in hunting is frequently mentioned in the ethnographic literature relating to the Nisenan. Littlejohn (1928) noted that the lower foothills in the valley oak zone were thickly covered with herbaceous vegetation that was annually burned by the Nisenan to remove and limit its growth while facilitating the growth of oaks for harvesting acorns. The annual fires destroyed seedlings but did not harm established oak trees. Beals (1933) also noted that the Nisenan regularly burned the land, primarily for the purpose of driving game, and consequently created much more open stands of timber than currently exist in the area. Beals (1933:363) informants stated that before their traditional burning regimes were halted by European Americans, "it was often a mile or more between trees on the ridges.” In addition to removing underbrush, improving travel conditions, and facilitating plant growth, burning may also have improved areas of deer forage, potentially altering migratory patterns of deer populations by lessening their need to seek fresh forage on a seasonal basis (Matson, 1972).

Communally organized Nisenan task groups exploited a wide variety of resources. Communal hunting drives were undertaken to obtain deer, quail, rabbits, and grasshoppers. Bears were hunted in the winter when their hides were at their best condition. Runs of salmon in the spring and fall provided a regular supply of fish, while other fish such as suckers, pike, whitefish, and trout were obtained with snares, fish traps, or with various fish poisons such as soaproot (Beals, 1933; Faye, 1923; Wilson and Towne, 1978). Birds were caught with nooses or large nets and were also occasionally shot with bow and arrow. Game was prepared by roasting, baking, or drying. In addition, salt was obtained from a spring near modern-day Rocklin (Wilson and Towne, 1978).

Acorns were gathered in the fall and stored in granaries for use during the rest of the year. Although acorns were the staple of the Nisenan diet, they also harvested roots like wild onion and Indian potato, which were eaten raw, steamed, baked, or dried and processed into flour cakes to be stored for winter use (Wilson and Towne, 1978).

Buckeye, pine nuts, hazelnuts, and other edible nuts further supplemented the diet. Key resources such as acorns, salmon, and deer were ritually managed through ceremonies to facilitate successful exploitation and equitable distribution (Beals, 1933; Swezey, 1975; Swezey and Heizer, 1977).

Trade was important, with goods traveling between the coast and valleys into the Sierra Nevada, and beyond to the east. Coastal items like shell beads, salmon, salt, and Foothill pine nuts were traded for resources from the mountains and farther inland, such as bows and arrows, deer skins, and sugar pine nuts. In addition, obsidian was imported from the north (Wilson and Towne, 1978).

The rituals that surrounded the act of harvesting, hunting, or fishing were as important as the act itself. How one approached a plant or animal—with what frame of mind and heart—was very significant. A personal connection was often made by saying a silent prayer, leaving an offering, and thanking the plant or animal for the gift of its life (Anderson, 2005). Straying from this common practice was understood to result in the diminishment of plant and animal numbers. A prominent Pomo basket weaver explained this personal connection place and to the plants:

> "When you come to dig these basket roots, you don't rush there and run all over, you don't do that. My mother always approached this grass very slowly. She'd come and stand and say a prayer. She also had a cane, and she'd touch this grass with it very slowly. She didn't go in there and just start digging. She'd come to a certain bed and try it; then she'd go on to another one and try there. Before she ever sat down, she'd do this three or four times. Then she'd sit down. She always asked the Sprit to give her plenty of roots. Then she'd says, "Thank you, Father," before she dug. And after she'd finished and had got what she wanted, she said a prayer, which is like saying, "That's good, you gave me enough. Amen, Father."

Oral Traditions

Oral histories, explanatory stories, and cautionary tales were, and continue to be integral aspects of native Californian culture. Stephen Powers, an anthropologist, once wrote:

> "The boundaries of all tribes…are marked with the greatest precision, being defined by certain creeks, canyons, boulders, conspicuous trees, springs, etc., each of which has its own individual name. Accordingly, [they] teach these things to their children in a kind of sing song…Over and over, time and again, they rehearse all these boulders, etc., describing each minutely and by name, with its surroundings. Then, when the children are old enough, they take them around…and so faithful has been their instruction, that [the children] generally recognize the objects from the descriptions given them previously by their mothers."

Nisenan groups had a holistic epistemology; a theorem of holistic knowledge in which any subject is a composite of all other subjects, and every aspect of knowledge is interconnected. The Nisenan world contained many ineffable supernatural beings and spirits, and all natural objects were endowed with potential supernatural powers (Beals, 1933).

Story-Telling and Dance

Stories about world creation and human origins vary amongst different ethnographic accounts as well as amongst different groups. Some expressed the idea that the world has always existed, but in different forms; some told that everything was made by someone, and that all birds and animals were once human; others told of a flood that killed the first people because they were bad (Kroeber, 1929). In creation stories there was a culture hero, usually who created earth, and Coyote the trickster, who introduced death and conflict to a once utopian existence (Beals, 1933; Kroeber, 1929).

Regional and Project Site Accounts

Nisenan groups in the valley tended to define themselves by stream systems and native communication often followed these waterways. The Nisenan recognized several political divisions within their territory (Wilson and Towne, 1978:387). The Hill Nisenan, located between the Cosumnes River and the South Fork of the American River near Placerville, formed a tribelet with strong affiliations with Valley Nisenan, who lived in the lower drainages of the American River and on ridges that lay along the South Fork of the American River.

The project area comprises an area marginal to both the cultures of the Valley and Hill groups. The locale of the Indian village of Natomo, repeatedly mentioned in the New Helvetia Diary of 1847-48, is unknown. It may or may not be in the vicinity of Natoma (northwest of the project site). Kroeber (1925:394) also notated the hamlet of Yokok north of the project site, being near the confluence of the North and South forks of the American River (Lindstrom, 1989).

The nearest seasonal occupation site of the Nisenan occurs near the Walltown mining district (ECORP, 2021). The Walltown Village was occupied until the 1880s and was probably established in response to Euroamerican gold activities. In his monograph, Payen (1961) refers to the Walltown Nisenan and describes their lifestyle according to the informant interviews. More properly, the name Tosewin should be used, as this was the indigenous name given to the Valley people in the vicinity of Folsom, Orangevale, Natoma, Latrobe, Clarksville, and Sloughouse. The camp was within the Walltown Mining District and so this local Nisenan group was named after the district by other ethnographers.

The Nisenan near Walltown occupied areas along streams and in areas of thick oak forests. Their villages were nearly always built on low natural rises along streams and rivers or on gentle slopes with southern exposure, seldom in a flat or swampy place. They rarely settled in the open grassland area. These open lands were utilized for grasshopper drives.

Natural vegetation that would have been considered a tribal cultural resource occur both within and in vicinity of the project site. Cottonwoods occur within the Alder Creek corridor and where water collects in ponds. Ponderosa pine (*Pinus ponderosa*) and digger pine (*P. sabiana*) grow where water is scarce. Blue Oak (*Quercus douglassi*),

interior live oak (*Q. wislizenii*), buckbrush (*Ceanothus cunneatus*), blackberry (Rubus spp.), and assorted grasses and forbs are found in less disturbed portions of the project site. Baccaris scrub covers the western third of the parcel on lands worked by a reclaiming dredge. Observed wildlife includes rabbits, deer, small mammals, and a wide variety of birds (ECORP, 2021).

Numerous trails ran through the foothill area. A major trail came from north of the American River, crossed at a natural ford near Black Miner's Bar, and then ran through the open grasslands past White Rock (this route may have taken indigenous travelers in the vicinity of Aerojet property).

The Indigenous lifeways known within the landscape of Tosewin were drastically impacted by the gold rush. Nisenan culture in the project vicinity terminated as a functioning unit about 1871 (Payen, 1961:36). A village near the present site of the Cameron Park subdivision was burned in 1861, their leaders killed, and its 450 inhabitants were run off by miners (Payen, 1961:6). Some Indians turned to gold mining to supplement traditional subsistence strategies and Native American gold miners operated in the Folsom vicinity. Bill Franklin, a 75-year-old Nisenan Miwok Indian recalls working in the gold dredge operations near Prairie City (Franklin-Lindberg Personal Communication, 1/22/1988). As a child, he also reworked gravels along the banks of the American River. He recalls pulling out clumps of Bermuda grass along the river's edge and shaking the trapped gold out into sluice boxes. In the 1930s he mined the area with shovel and sluice box. During the depression he picked olives on the reclaimed lands on Aerojet property.

Regulatory Setting

Federal

Section 106 of the National Historical Preservation Act, 1966

Federal regulations for cultural resources are governed primarily by Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended). Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and affords the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. The ACHP's implementing regulations are the "Protection of Historic Properties" 36 Code of Federal Regulations (CFR) Part 800. The Federal agency first must determine whether it has an undertaking that is a type of activity that could affect historic properties. Historic properties are those that meet the criteria for or are listed in the National Register of Historic Places (NRHP).

Traditional Cultural Properties

Traditional Cultural Properties (TCPs) are resources eligible for the NRHP based on cultural significance derived from the "beliefs, customs, and practices of a living community of people that have been passed down through the generations" (National Park Service (NPS) 1998:1). TCPs embrace a wide range of historic properties, such as

the location associated with a Native American group's origin or the origin of the world (cosmogony), or an urban neighborhood that is the traditional home of a particular cultural group and that still reflects and is associated with their beliefs and practices. Other examples include places where traditional people historically have gone and continue to visit for ceremonial practices. These examples are not intended to be exhaustive, but instead to illustrate the range of possible TCPs. The NPS National Register Bulletin 38 defines a historical property as a place that is eligible for NRHP inclusion "because of its association with cultural practices or beliefs of a living community that (a) are rooted in the community's history and (b) are important in maintaining the continuing cultural identity of the community" (NPS, 1998:1). The identification and evaluation of TCPs can be conducted only by consultation with members of the relevant group of people that ascribe value to the resource, or through other forms of ethnographic research.

EVALUATION OF TCPS

Federal agencies must evaluate TCPs for eligibility for listing in the NRHP to determine if they are historic properties subject to management as required under Section 106 of the NHPA. Evaluation of TCPs requires two major steps: first the Federal agency evaluates the integrity of the resource as a TCP, then evaluates the resource for eligibility listing on the NRHP under the process for assessing significance and integrity of historic properties. As with any resource that is evaluated for listing in the NRHP, the TCP must be a tangible district, site, building, structure, or object (NPS, 1998:11). This consideration requires merely that the TCP be a physical place or tangible object, in the broadest sense, rather than the intangible beliefs or values alone.

INTEGRITY OF TCPS

The TCP must have integrity, like any property eligible for listing in the NRHP. For traditional cultural resources, this means that they must have "integrity of relationship" and "integrity of condition" (NPS, 1998:11–12). Integrity of relationship means simply that the specific place is integral and necessary to a traditional cultural group's beliefs or specific practices (NPS, 1998:11). National Register Bulletin 38 gives the example of two different cultures, one that believes that baptism at a specific river is necessary to accept individuals as members, and another that simply requires baptism in any body of water. For the first example, the river is integrated into beliefs and practices of a traditional culture and thus has integrity of relationship.

Integrity of condition requires simply that the TCP has not been altered in such a way that it no longer can serve its function for the traditional cultural group. For example, a pilgrimage route to a sacred site would no longer have integrity of condition if modern construction had physically interrupted the route and thus made it unusable. This requirement does not mean that the TCP must be completely intact without any changes to the setting or features of the resource; rather, the test is whether the resource can still function for traditional cultural purposes or whether the presence of new elements disrupts the function. National Register Bulletin 38 offers an example of a resource that has integrity despite changes to the setting. If the TCP has integrity of

relationship and integrity of condition, evaluation progresses to the second step of evaluating the resource for eligibility for listing in the NRHP, as described above.

STATE

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA requires public agencies to consider the effects of their actions on historical resources, unique archaeological resources, and TCRs. Under Public Resources Code (PRC) Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Under PRC Section 21084.2, a "project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources.

TRIBAL CULTURAL RESOURCES

CEQA requires lead agencies to consider whether projects will affect TCRs. TCRs may or may not manifest as archaeological sites. In some cases, TCRs are viewsheds, plant gathering areas, or other sacred spaces that are not readily identifiable to non-tribal members. In many cases, TCRs also include an archaeological component, such as artifacts, features, and sites (with or without human remains). PRC Section 21074 states the following:

(a) "Tribal cultural resources" are either of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the CRHR.

(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

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

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, of a "non-unique

archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms to the criteria of subdivision (a).

Assembly Bill (AB) 52

AB 52 (effective July 1, 2015) added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 to CEQA, relating to consultation with California Native American tribes, consideration of "tribal cultural resources," and confidentiality. AB 52 provides procedural and substantive requirements for lead agency consultation with California Native American tribes and consideration of effects on tribal cultural resources, as well as examples of mitigation measures to avoid or minimize impacts to tribal cultural resources. AB 52 establishes that if a project may cause a substantial adverse change in the significance of a tribal cultural resource, that project may have a significant effect on the environment. Lead agencies must avoid damaging effects to tribal cultural resources, when feasible, and shall keep information submitted by tribes confidential.

AB 52 requires a lead agency to consult with California Native American tribes that are traditionally and culturally affiliated with the geographic area of the proposed project, if the tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area and the tribe requests consultation. Section 21080.3.1(d) states that within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project location and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to requests consultation pursuant to this section.

Local

Sacramento County General Plan

The Sacramento County General Plan of 2005–2030 (Sacramento County 2011, as updated in 2017) Conservation Element, states under Section VI, Cultural Resources, the following goal and six objectives:

Promote the inventory, protection and interpretation of the cultural heritage of Sacramento County, including historical and archaeological settings, sites, buildings, features, artifacts and/or areas of ethnic historical, religious or socio-economic importance.

1. Comprehensive knowledge of archaeological and historic site locations.

2. Attention and care during project review and construction to ensure that cultural resource sites, either previously known or discovered on the project site, are properly protected with sensitivity to Native American values.

3. Structures with architectural or historical importance preserved to maintain contributing design elements.

4. Known cultural resources protected from vandalism unauthorized excavation, or accidental destruction.

5. Properly stored and classified artifacts for ongoing study.

6. Public awareness and appreciation of both visible and intangible historic and cultural resources.

To implement the primary goal and the objectives, the Conservation Element contains the following policies relevant to the project and TCRs:

CO-150: Utilize local, state, and national resources, such as the North Central Information Center (NCIC), to assist in determining the need for a cultural resources survey during project review.

CO-151: Projects involving an adoption or amendment of a General Plan or Specific Plan or the designation of open space shall be noticed to all appropriate Native American tribes in order to aid in the protection of traditional tribal cultural places.

CO-152: Consultations with Native American tribes shall be handled with confidentiality and respect regarding sensitive cultural resources on traditional tribal lands.

CO-153: Refer projects with identified archeological and cultural resources to the Cultural Resources Committee to determine significance of resource and recommend the appropriate means of protection and mitigation. The Committee shall coordinate with the Native American Heritage Commission (NAHC) in developing recommendations.

CO-154: Protection of significant prehistoric, ethnohistoric and historic sites within open space easements to ensure that these resources are preserved in situ for perpetuity.

CO-155: Native American burial sites encountered during preapproved survey or during construction shall, whenever possible, remain in situ. Excavation and reburial shall occur when in situ preservation is not possible or when the archeological significance of the site merits excavation and recording procedure. On-site reinterment shall have priority. The project developer shall provide the burden of proof that off-site reinterment is the only feasible alternative. Reinterment shall be the responsibility of local tribal representatives.

CO-157: Monitor projects during construction to ensure crews follow proper reporting, safeguards, and procedures.

CO-159: Request a Native American Statement as part of the environmental review process on development projects with identified cultural resources.

Significance Criteria and Methodology

Significance Criteria

In addition to the questions in Section V of Appendix G of the CEQA Guidelines, on September 27, 2016, the California Office of Administrative Law officially adopted new Appendix G questions pertaining to impacts on TCRs pursuant to the provisions of AB 52. Based on these questions the project would result in a significant impact if the project would:

> Cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
>
> i) Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k), or
>
> ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Methodology

The analysis of tribal cultural resources provided in this section is based on a cultural resources records search through the California Historical Resources Information System NCIC and a Sacred Lands File (SLF) search through the NAHC. In addition, ECORP reviewed available Sanborn Maps, historic aerials, and conducted an intensive pedestrian survey for the project site. The County also submitted notification and request to consult letters to all interested Native American individuals and organizations on the County's AB-52 Notification List and conducted follow-up Native American consultation pursuant to AB-52. These notification letters are included as an appendix to the Tribal Cultural Resources Assessment.

Impacts Not Discussed Further

All issues identified in the significance criteria are evaluated below.

IMPACTS AND ANALYSIS

IMPACT TCR-1: WOULD THE PROJECT CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A TRIBAL CULTURAL RESOURCE

No indigenous or tribal cultural resources have been recorded within the project site or half-mile radius. Where there are numerous reports supporting the likelihood that Nisenan lived near, walked through, and benefitted from tribal cultural resources that once flourished in the project site, no preserved evidence has been found. It is likely that the development and mining history of the project site has displaced any tribal cultural resources that may have been formerly located on the project site.

Letters with an invitation to consult were sent to consulting tribes on September 9, 2022. The County has not received consultation requests from consulting tribes and no known tribal cultural resources have been identified within the project site. The County was notified by the NAHC that the project site area is not considered sensitive for potential tribal cultural resources. Therefore, the project would not cause an impact to known tribal cultural resources. Refer to Section Chapter 7 of this Draft EIR for mitigation that addresses impacts to the inadvertent discovery of pre-contact archaeological resources. Mitigation Measures CR-1 through CR-4 are provided therein and include procedures to follow should such unknown resources be encountered during construction activities.

Mitigation measure TCR-1 has been included below if an inadvertent tribal cultural resource is uncovered during project implementation. With the recommended mitigation language impacts are ***less than significant***.

MITIGATION MEASURES

MITIGATION MEASURE TCR-1: TRIBAL CULTURAL RESOURCES UNANTICIPATED DISCOVERIES

In any suspected TCRs are discovered during ground disturbing construction activities, all work shall cease within 100 feet of the find, or an agreed upon distance based on the project area and nature of the find. A Tribal Representative from a California Native American tribe that is traditionally and culturally affiliated with a geographic area shall be immediately notified and shall determine if the find is a TCR (PRC Section 21074). The Tribal Representative will make recommendations for further evaluation and treatment as necessary. When avoidance is infeasible, preservation in place is the preferred option for mitigation of TCRs under CEQA and United Auburn Indian Community (UAIC) protocols, and every effort shall be made to preserve the resources in place, including through project redesign, if feasible. Culturally appropriate treatment may be, but is not limited to, processing materials for reburial, minimizing handling of cultural objects, leaving objects in place within the landscape, or returning objects to a location within the project area where they will not be subjected to future impacts. Permanent curation of TCRs will not take place unless approved in writing UAIC or by

the California Native American Tribe that is traditionally and culturally affiliated with the project area. The contractor shall implement any measures deemed by the CEQA lead agency to be necessary and feasible to preserve in place, avoid, or minimize impacts to the resource, including, but not limited to, facilitating the appropriate tribal treatment of the find, as necessary. Treatment that preserves or restores the cultural character and integrity of a TCR may include Tribal Monitoring, culturally appropriate recovery of cultural objects, and reburial of cultural objects or cultural soil. Work at the discovery location cannot resume until all necessary investigation and evaluation of the discovery under the requirements of CEQA, including AB-52, have been satisfied.

14 ALTERNATIVES

INTRODUCTION

State CEQA Guidelines Section 15126.6(a) requires EIRs to describe “a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a range of potentially feasible alternatives that will avoid or substantially lessen the significant adverse impacts of a project and foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.” This section of the State CEQA Guidelines also provides guidance regarding what the alternatives analysis should consider. Subsection (b) further states the purpose of the alternatives analysis is as follows:

Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code [PRC] Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

The State CEQA Guidelines require that the EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative must be discussed, but in less detail than the significant effects of the project as proposed (Section 15126.6[d]).

The State CEQA Guidelines further require that the “no project” alternative be considered (Section 15126.6[e]). The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving a proposed project with the impacts of not approving the proposed project. If the no project alternative is the environmentally superior alternative, CEQA requires that the EIR “shall also identify an environmentally superior alternative among the other alternatives” (Section 15126[e][2]).

In defining “feasibility” (e.g., “feasibly attain most of the basic objectives of the project”), Section 15126.6(f)(1) states, in part:

> "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives."

In determining what alternatives should be considered in the EIR, it is important to consider the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by the lead agency's decision-making body, here the Sacramento County Board of Supervisors. (See CEQA Sections 21081.5 and 21081[a][3].)

Considerations For Selection of Alternatives

Attainment of Project Objectives

Consistent with CEQA requirements (Guidelines Section 15124 (b)), primary consideration was given to alternatives that could reduce environmental impacts, while still meeting most of the project's objectives. As stated in Chapter 2, "Project Description," the project objectives of the proposed project include the following:

The project applicant has provided the following statement of basic project objectives consistent with CEQA Guidelines Section 15124 (b):

1. To maximize the on-site extraction of available dredge tailing sand and gravel reserves at a rate of up to 3 million tons per year, pursuant to permitted surface mining rights under the Aerojet SPA.

2. To allow mining and reclamation in a manner that will efficiently provide a 20 year supply of saleable sand and gravel reserves in mining blocks within close proximity to each other in order to justify the capital investment in the Project.

3. To continue to supply an economic and reliable source of construction materials to the Sacramento County market, including Portland Cement Concrete grade aggregate and asphaltic concrete, for a period of 20 years.

4. To allow for the transportation of mined materials by conveyor to leverage existing, separately permitted, off-site aggregate processing and conveyor infrastructure.

5. To mine property that largely consists of dredge tailing piles and return the property to a state that is readily adaptable and more suitable for future development within the Aerojet SPA via reclamation, which include grading of the dredge tailing piles to relatively flat pads.

6. To implement the proposed reclamation plan to establish end uses of undeveloped land and native grassland, which are readily adaptable to future uses allowed under the Aerojet SPA, in accordance with the Surface Mining and Reclamation Act (PRC 2710, et seq.).

Environmental Impacts of the Proposed Project

Chapters 3 through 15 of this EIR address the environmental impacts of implementing the proposed project. Potentially feasible alternatives were developed with consideration of avoiding or lessening environmental impacts of the project, as identified in this document.

The significant and unavoidable impacts of the project are:

- Chapter 4, Air Quality
    - Impact AQ-1: Increase of any Criteria Pollutant for which the project region is non-attainment (PM10)
- Chapter 5, Biological Resources:
    - Impacts BR-2: Adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service (oak woodlands and native trees).
    - Impact BR-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (oak woodlands and native trees).

The potentially significant impacts of the project that can be reduced to less than significant with mitigation include:

- Chapter 3, Aesthetics:
    - Impact AE-2: Create substantial new sources of light and glare.
- Chapter 5, Biological Resources
    - Impact BR-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.

  - Impact BR-3: Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means.

  - Impact BR-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

- Chapter 7, Cultural Resources

  - Impact CR-1: Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.

  - Impact CR-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

  - Impact CR-3: Disturb any human remains, including those interred outside of dedicated cemeteries.

- Chapter 9, Hazards and Hazardous Materials

  - Impact HAZ 1: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code 65962.5 and, as a result, would it create a significant hazard to the public or the environment

  - Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment

  - Impact HAZ-3: Create a significant hazard due to the routine transport, use, or disposal of hazardous materials or reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials.

  - Impact HAZ 4: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

- Chapter 12, Noise

  - Impact NO-1: Result in temporary, short-term exposure of sensitive receptors to construction noise.

  - Impact NO-2: Result in temporary, short-term exposure of sensitive receptors to potential groundborne noise and vibration from project construction.

- Chapter 13, Tribal and Cultural Resources
    - Impact TCR-1: Cause a substantial adverse change in the significance of a Tribal Cultural Resource.

RANGE OF ALTERNATIVES

The purpose of the alternatives chapter is to identify alternative project designs that would mitigate, lessen, or avoid the significant effects of the proposed project. To foster meaningful public discussion and informed decision-making, a range of reasonable alternatives to the proposed project is provided. An EIR need not evaluate an alternative that is considered speculative, theoretical, or unreasonable (State CEQA Guidelines Section 15126.6(f)(3)). Not every potentially feasible alternative need be considered; rather, the relevant test is whether a "reasonable range" of feasible alternatives is considered for that particular project (State CEQA Guidelines Section 15126.6(a)). This range includes the "No Project" alternative, the purpose of which is to allow the hearing body to compare the impacts of approving the proposed project to the impacts of not approving the proposed project.

A range of alternatives that could reduce or eliminate some of the proposed project's significant impacts were considered for the analysis within this chapter. The State CEQA Guidelines state that the EIR must identify the environmentally superior alternative, which is discussed at the end of this chapter under "Environmentally Superior Alternative."

ALTERNATIVES CONSIDERED BUT NOT EVALUATED FURTHER

As described above, State CEQA Guidelines Section 15126.6(c) provides that the range of potential alternatives for the project shall include those that could feasibly accomplish most of the basic objectives of the project, and could avoid or substantially lessen one or more of the significant effects. Alternatives that fail to meet the fundamental project purpose need not be addressed in detail in an EIR (*In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* [2008] 43 Cal 4th 1143, 1165-1167).

In determining what alternatives should be considered in the EIR, it is important to acknowledge the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by lead agency decision maker(s). (See CEQA Section 21081[a][3].) At the time of action on the project, the decision maker(s) may consider evidence beyond that found in this EIR in addressing such determinations. The decision maker(s), for example, may conclude that a particular alternative is infeasible (i.e., undesirable) from a policy standpoint, and may reject an alternative on that basis provided that the decision maker(s) adopts a finding,

supported by substantial evidence, to that effect, and provided that such a finding reflects a reasonable balancing of the relevant economic, environmental, social, and other considerations supported by substantial evidence (*City of Del Mar v. City of San Diego* [1982] 133 Cal.App.3d 401, 417; *California Native Plant Society v. City of Santa Cruz* [2009] 177 Cal.App.4th 957, 998).

The EIR should also identify any alternatives that were considered by the lead agency but were rejected during the planning or scoping process and briefly explain the reasons underlying the lead agency's determination.

The following alternatives were considered by the County but are not evaluated further in this EIR.

Alternative location

Many factors are considered in the selection of an aggregate mine, including quality and quantity of the resource, its location and distance to the market consumption area, roadway accessibility, availability of the land, a willing lessor or seller, mining economics (such as the amount of overburden that must be removed), proximity to existing conveyor facilities and processing plants, and other factors. In fact, the CEQA Guidelines (Section 15126.6(f)(2)(b)) recognize mining projects to be an example of why evaluation of an alternative location may not be feasible, due to the fact that location of the mineral resource is fixed to the site.

If the mining site was changed to another location, the significant and unavoidable impacts associated with the mine would most likely remain the same, similar or potentially increase. Regardless of location, heavy equipment is needed to mine and will usually result in a significant impact. Furthermore, a mine located farther away from either the existing conveyor system, the existing processing plant or market area would result in increased air quality and greenhouse gas (and possibly traffic) impact due to aggregate hauling. The current location is near the market area and allows extension of the existing electric conveyor to send raw aggregate material to the existing permitted processing plant, Teichert's Grantline plant. Thus, an alternative location would not reduce significant impacts and could even result in some additional impacts. Therefore, this alternative was not further analyzed.

Delayed Project Initiation and Operation

During the NOP scoping phase, comments were received from the Department of Toxic Substances and Control (DTSC) expressing concern that the remediation efforts associated with historical activities at Aerojet have not been complete, and in some cases, remedial investigations to fully classify the vertical and horizontal extent of contamination have not yet taken place in areas of proposed mining.

The proposed mining area boundary includes large portions of operating units (OUs) 8 and 9, and two source area management areas within OU-7, which still require completion of remedial investigation, risk characterization, and remedy determination. Additionally, multiple RCRA units and septic tanks have been referred to CERCLA to be

addressed under these OUs within the proposed mining boundary. The proposed surface mining area overlays contaminated groundwater plumes undergoing monitoring and remediation in accordance with the Perimeter Groundwater Operation Unit (PGOU) Groundwater interim remedy. Pursuant to the PCD, portions of the Aerojet site have notification requirements and grading restrictions in place due to past contamination. Mining and soil disturbance activities conducted within these OUs could overlap with some areas that have been identified with current restrictions per the PCD. These areas have not had a remedial investigation and risk assessment completed, remedy identified, and could potentially put mine workers and nearby communities at risk to exposure from contaminated materials; potentially impact end user health and safety from mined material; and/or have impacts on the future remedial actions not yet planned for these areas.

However, buffer zones are implemented as identified in Plate PD-8. Mapping efforts were utilized to develop the proposed mining plan in coordination with Aerojet in a way that avoids known contamination areas and would not interfere with ongoing remediation efforts. The mining plan would implement a delineated 100-foot buffer around all known locations where concentrations of chemicals exceed defined cleanup levels, as well as around the known septic tanks and RCRA units. These areas are referred to as “constrained areas” for purposes of the project description and are excluded from any ground disturbing activities in the proposed project. The intent of implementing a “constrained area” buffer is two-fold – minimize exposure to workers and the environment and ensure Aerojet can continue with Superfund cleanup activity by not interfering with monitoring wells and stations.

Based on this mining plan, all impacts have been identified as less than significant or less than significant with mitigation (see Chapter 9, Hazardous Materials), However, a conservative approach in response to the concerns regarding the potential for interaction between project activities and ongoing remediation activities at the project site raise the question of an alternative that would consider a delayed initiation until after remediation efforts have been complete, or progressed to a point that limits of contamination would not have the potential to interfere with mining activities (i.e., surface-related contamination, as groundwater cleanup efforts will be ongoing for many years, the project would not interfere with groundwater).

The timeline for cleanup activities has historically, and may in the future, varied substantially between OUs, depending on the complexity of the contamination issues and the ultimate EPA-selected remedy. As noted in Table HAZ-1, OU-7, OU-8, and OU-9 are currently under investigation and do not have USEPA-selected remedies in effect yet. For example, the remedial investigation/feasibility study (RI/FS) for OU-8 has an approximate completion date of 2032, but the timeline for the full completion of remediation is currently unknown and not estimable. Thus, at this point in time, it is very difficult to estimate how long it would take to fully remediate the contamination on the project site. Given that the Aerojet property has been on the Superfund list since 1983 and that the different OUs that are located within the mining project site do not yet have EPA-selected remediation plans, it is assumed for the purposes of this analysis that it

could require at least a decade, if not considerably longer, to achieve the desired full completion of remediation.

Given that there are no significant and unavoidable impacts identified from Hazardous Materials and the length of time that would be required for remediation of the site, this alternative would not meet project objectives of providing a 20 year supply of saleable gravel reserves. The 20 year supply timeline was developed in conjunction with the timing of application submittal, and the operational needs at Teichert's Grantline plant, which is currently nearing the end of its permitted reserves. It is estimated that there are less than five years of permitted reserves remaining at the Teichert East and Rio Del Oro mining sites that supply the Grantline plant. Therefore, in order to meet the project objectives, the proposed project would need to operational prior to mining of the remaining permitted reserves.

Description of Analyzed Alternatives

Alternative A: No Project

The purpose of describing and analyzing a No Project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The No Project alternative analysis is not the baseline for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline (State CEQA Guidelines Section 15126.6(e)(1)). In this case, the No Project alternative assumes no mining activity, but does account for continued operation at the Aerojet campus, in which there are existing uses that are currently permitted by right that are presumed to continue into the future. Some of those uses could require the removal of mine tailings in order to facilitate permitted development. Potential future uses under the No Project alternative are those uses that would currently be permitted by right per the Aerojet SPA and would not require any additional discretionary approvals.

Alternative B: Reduced Footprint

The Reduced Footprint alternative considers a project with the same operational aspects, but on a smaller footprint within the Aerojet property with the intent to reduce impacts that are significant and unavoidable, specifically impacts to native trees. Alternative B assumes that the same entitlements would be required as the project. As such, where mitigation has been identified for the proposed project, the same mitigation would also be applicable to Alternative B.

Methodology

The footprint of Alternative B was derived from determining where the mining footprint could be reduced to achieve the great amount of reduction in tree removal with the smallest reduction in grading footprint. Mapped landcovers for the full project site are illustrated in Plates BR-1 through BR-4. Landcovers that contain the densest amount of

native trees are Blue Oak Woodland, and Interior Live Oak Woodland. These landcover types are defined by a 50 percent relative cover in the tree layer, and the majority of the canopy is comprised of protected oak trees. The proposed project has been designed to fully avoid the mapped Blue Oak Woodlands onsite, so mapped areas of Interior Live Oak Woodland were analyzed as potential avoidance areas to reduce native tree removal.

Interior Live Oak Woodland occurs in stretches between existing mine tailings. Many areas of Interior Live Oak Woodland would be avoided by the proposed project because the project grading activities are focused on the removal of dredge tailings, which can mostly be extracted without vegetation disturbance. The areas mapped as Live Oak Woodland that are within the proposed grading limits of the project are shown below in Plates ALT-1 and ALT-2. The blue outlined areas identify the areas of Interior Live Oak Woodland that are currently proposed for removal as part of grading activities.

Alternative B reduces the grading footprint in these areas to preserve the native trees within the delineated areas of Interior Live Oak Woodland. Grading reductions were conservatively estimated by calculating the area encompassed by tree canopy, and the adjacent dredge tailings, under the assumption that the adjacent dredge tailing may not be feasibly mined in order to avoid native trees and ensure appropriate reclamation slopes are achieved in the event an entire tailing is unable to extracted. The four areas identified in the images above would result in an approximately 30 acre reduction of the 991.5 project grading footprint (3% reduction in acreage).

Plate ALT-1: Interior Live Oak Woodland Within Grading Limits (1 of 2)

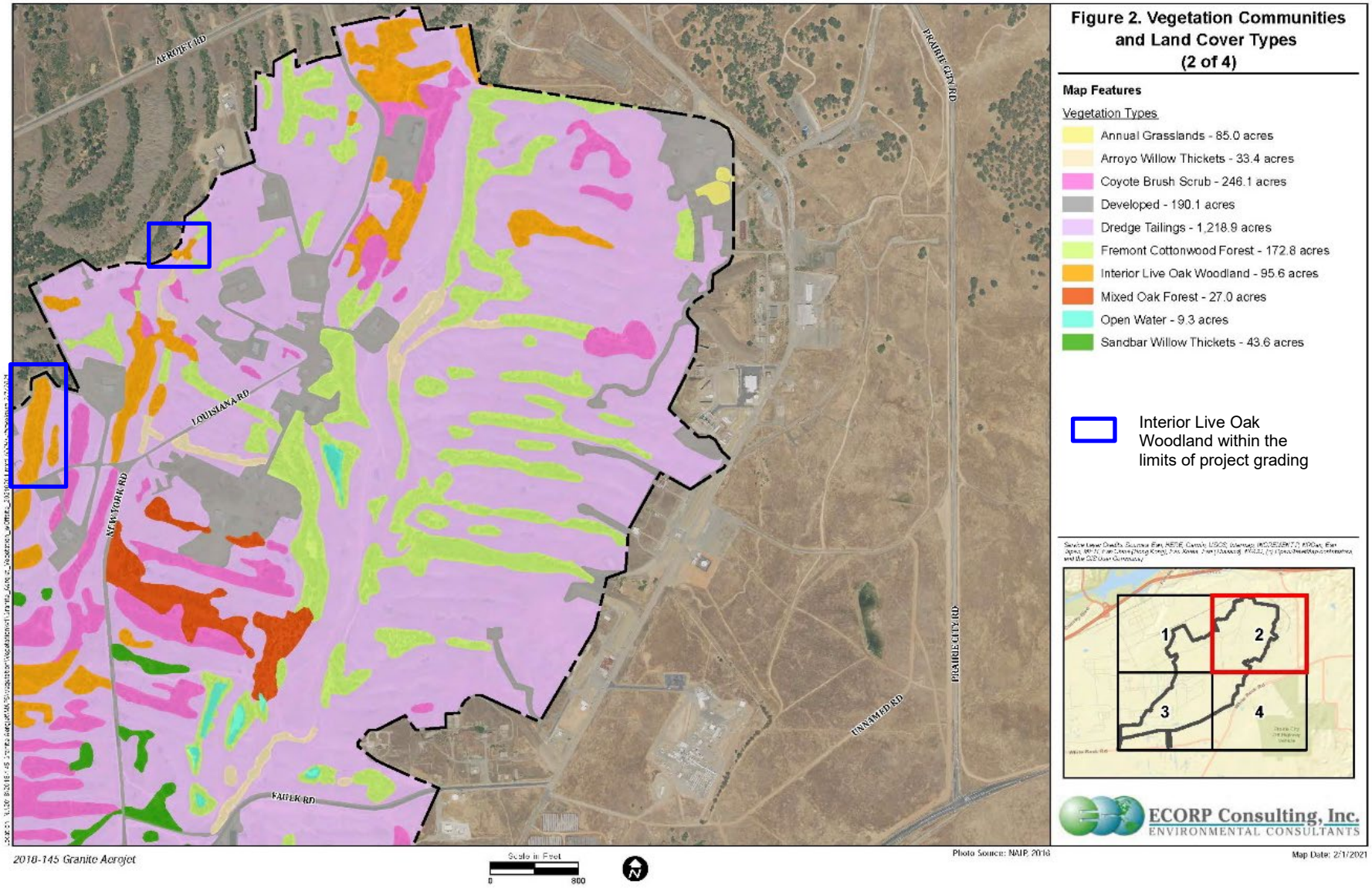
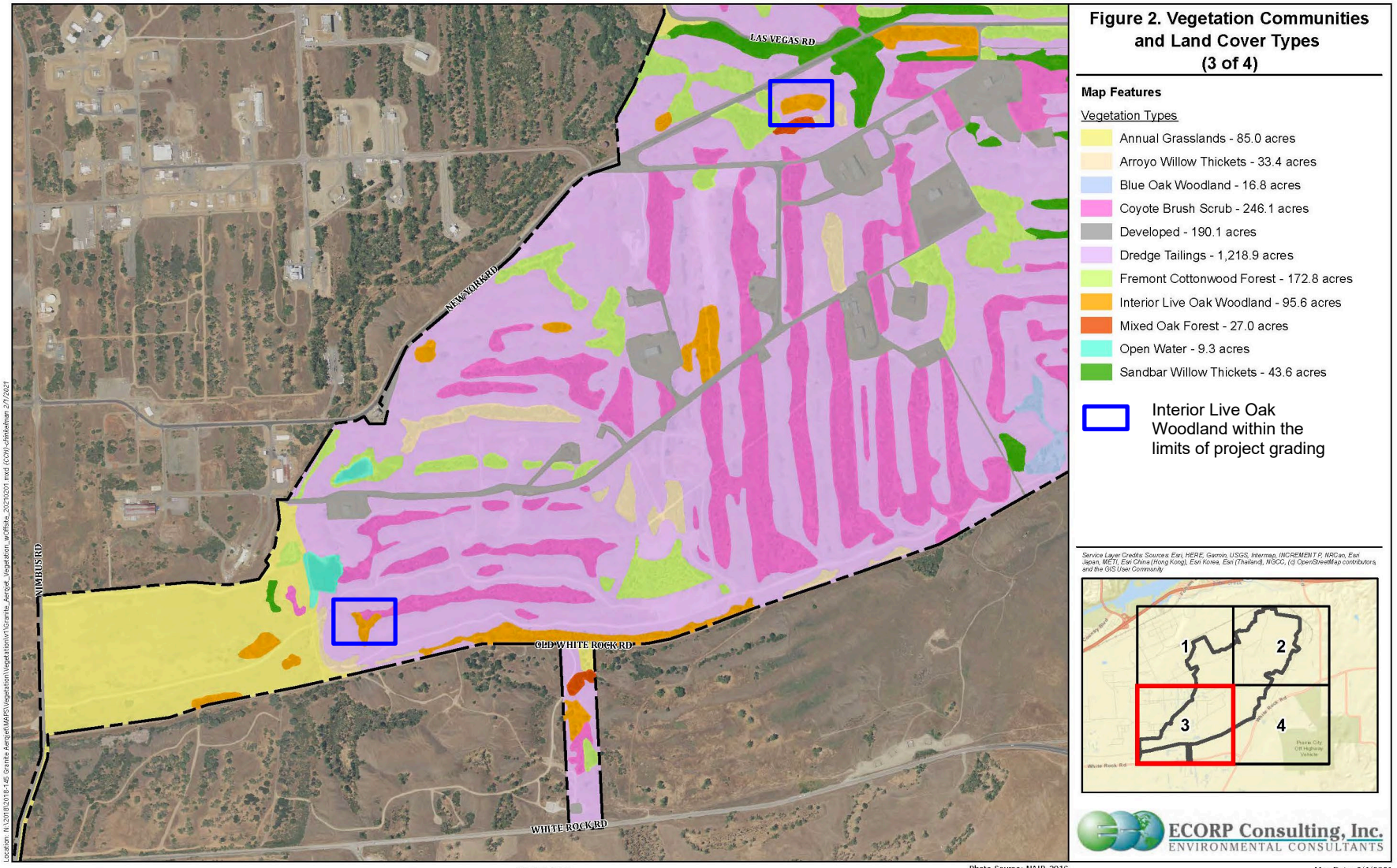


Plate ALT-2: Interior Live Oak Woodland Within Grading Limits (2 of 2)



Alternatives Analysis

The proposed project is fully discussed, with regulatory and environmental setting discussions, in the chapters of the main EIR document. The discussions below focus on impacts analyses and do not repeat the regulatory and environmental settings contextual background. A summary matrix is included at the end of this document clearly identifying the range of Alternatives and their respective impacts to select environmental topics in relation to the proposed project.

Alternative A: No Project Alternative

Aesthetics

Alternative A would result in less impacts to Aesthetics than the proposed project. Under Alternative A, the topography would remain unchanged. There would be no impact, due to no permanent alteration of the landform associated with removal of dredge tailings.

Air Quality

Alternative A would result in less impacts to Air Quality than the proposed project. Permitted uses may still be constructed and operated at the Aerojet campus. Based on historical operation and allowed uses under the Aerojet SPA, it is unlikely that there would be a level of developed, permitted uses that would result in an impacts related to Air Quality that would be higher than those identified for the project, due to the level of temporal impact of the mining activity. As such, significant and unavoidable impacts associated with Air Quality for the proposed project would not occur under Alternative A.

Biological Resources

Alternative A would result in less impacts related to Biological Resources than the proposed project. The project would result in significant and unavoidable impacts related to oak woodlands and native tree removal. Under Alternative A, there could be impacts related to Biological Resources resulting from implementation of permitted activities within the Aerojet campus. Based on historical operation and allowed uses under the Aerojet SPA, it is unlikely that there would be a level of permitted development that would result in as much native tree removal that is proposed by the project in the same timeframe. Additionally, any permitted development at Aerojet would still be subject to state and federal regulations including the Clean Water Act and Endangered Species Act, and would implement the necessary measures to comply with the appropriate permits and regulations to avoid impacts to species. As such, the significant and unavoidable impacts associated with Biological Resources for the proposed project would not occur under Alternative A.

Greenhouse Gas Emissions

Alternative A would result in less impacts related to Greenhouse Gas Emissions than the proposed project. Under Alternative A, there could be additional permitted uses

constructed at the Aerojet campus. However, given the historical trend of new constructed uses at Aerojet, it is unlikely that there would be a level of new development that would result in new uses with more impacts related to Greenhouse Gas Emissions, within the timeframe that is proposed for the project. As such, Alternative A would result in fewer impacts related to Greenhouse Gas Emissions.

Cultural Resources

Alternative A could have more substantial impacts on cultural resources than the project. Under the no project alternative, ground disturbing activities currently allowed by right under the Aerojet SPA could occur on the project site without the benefit of included mitigation to address the event of inadvertent discoveries. If a cultural resource were to be uncovered, there would be no protocol in place to protect the resource, thereby risking direct impacts to cultural resources.

Geology and Soils

Alternative A would result in less impacts related to Geology and Soils than the proposed project. Under Alternative A, there may be additional development, permitted by right under the Aerojet SPA. However, it is unlikely that there would be a level of new activity at Aerojet that would result in the same amount of ground disturbance as the project. Because impacts related to Geology and Soils are related to the amount of ground disturbance, Alternative A would result in reduced Geology and Soils impacts compared to the project.

Hazards and Hazardous Material

Alternative A would result in less impacts related to Hazards and Hazardous Materials compared to the proposed project. Under Alternative A, there may be additional, development permitted by right under the Aerojet SPA. However, it is unlikely that there would be a level of new activity at Aerojet that would result in the same amount of ground disturbance as the project. Potential impacts related to the project are related to inadvertent discoveries with toxic materials that may be encountered during implementation of the project. Because Alternative A would result in less ground disturbance over the life of the project, there would be less potential for inadvertent encounter of hazardous material when compared to the project.

Hydrology and Water Quality

Alternative A would result in less impacts related to Hydrology and Water Quality than the proposed project due to the potential for less ground disturbance. Under Alternative A, there may be additional, development permitted by right under the Aerojet SPA. However, it is unlikely that there would be a level of new activity at Aerojet that would result in the same amount of ground disturbance as the project. Any additional permitted activities would be subject to existing regulations related to water quality such as the State general construction and industrial permits to reduce water quality impacts for covered activities. As such, impacts related to Hyrdology and Water Quality under Alternative A would be similar compared to the project.

Land Use

Alternative A would result in similar impacts to the proposed project. Any future development or operations on the site would be consistent with all adopted land use plans and County codes. Therefore, there would be no impacts with regards to land use.

Noise

Alternative A would result in less impacts related to noise than the proposed project Potential noise impacts were identified, and mitigation proposed, for the project in proximity to future, planned residential uses, adjacent to the perimeter of the Aerojet campus. Under Alternative A, permitted activities would continue to be implemented on the Aerojet campus, including potential noise generating uses and construction related noise, consistent with the provisions of the SPA. Development standards related to noise are outlined in the provisions of the SPA, and development consistent with the SPA must implement noise mitigation and attenuation (as required) consistent with General Plan policy, which is the same standard used to evaluate the project. Therefore, the impacts associated with Noise for Alternative A would be similar to the project.

Tribal Cultural Resources

Alternative A could have more substantial impacts on tribal cultural resources than the project. Under the no project alternative, ground disturbing activities currently allowed by right could occur on the project site without the benefit of included mitigation to address the event of inadvertent discoveries. If a tribal cultural resource were to be uncovered, there would be no protocol in place to protect the resource, thereby risking direct impacts to tribal cultural resources.

Alternative B: Reduced Footprint

Aesthetics

Alternative B would result in impacts related to Aesthetics that would be similar in nature to the proposed project. While the limits of disturbance would be reduced, the footprint would not be reduced to such a degree that it would significantly alter the visual impacts from public viewpoints. The reduced grading activities would be located interior to the Aerojet site, and visual impacts from public viewpoints would remain unchanged. Similarly, after hour operations may still be proposed, in which case the mitigation for the proposed project addressing nighttime lighting impacts would be applicable to Alternative B.

Air Quality

Alternative B would result in impacts related to Air Quality that would be slightly reduced compared to the proposed project. Under Alternative B, the daily impacts associated with Air Quality would be similar, but because the overall footprint is reduced, the total emissions over the life of the project would be reduced compared to the proposed project. Although Alternative B would result in a smaller footprint, impacts related to Air

Quality are assessed on a worst case scenario per day during operation. As such, the daily impacts related to Air Quality would remain similar in nature because a reduction in overall disturbance would still result in the same potential impacts per day. Therefore, Alternative B would still result in impacts related to PM10 generation that are significant and unavoidable. The mitigation measures for the proposed project would also be applicable to Alternative B.

Biological Resources

Alternative B would result in reduced impacts with respect to Biological Resources. Due to the specific locational nature of some biological resources (wetlands for example), impacts for certain biological resources would remain similar to the proposed project as discussed further below. Mitigation related to Biological Resources that has been recommended for the proposed project would be applicable to Alternative B as well.

Special Status Species

Impacts related to special status species would be reduced or have similar impacts as the project depending on the species. Alternative B would not result in any changes related to impacts to waters, so species that are reliant on some form of aquatic habitat (vernal pool crustaceans, Western Spadefoot, Northwestern Pond Turtle) would have similar impacts as the project under Alternative B.

Species that are reliant on woodland/trees for habitat, would have reduced impacts under Alternative B, due to fewer impacts related habitat removal, and a decreased potential for impacts to individuals that may be nesting/roosting in trees that require removal. This includes special status birds and bats. Additionally, Alternative B would result in fewer impacts to elderberry, including at least one that has documented exit holes, and at least one that has not been able to be surveyed for exit holes due to inaccessibility.

Sensitive Natural Communities

Alternative B would result in decreased impacts related to sensitive natural communities compared to the project. Alternative B would result in similar impacts related to grasslands and jurisdictional waters, because the alternative footprint under Alternative B would not impact grasslands or waters. Alternative B would result in reduced impacts to oak woodland, specifically Interior Live Oak Woodland by approximately 6.3 acres. The project has been designed to avoid most mapped woodlands onsite, and under Alternative B, nearly all 95.6 acres of Interior Live Oak Woodland would be avoided.

Wetlands and Waters

Alternative B would result in similar impacts related to wetlands and waters, because the alternative footprint under Alternative B would not result in new or different impacts to waters.

MIGRATORY SPECIES AND WILDLIFE CORRIDORS

Alternative B would result in slightly decreased impacts to migratory species and wildlife corridors due to decreased tree removal and potential for direct impacts to migratory birds that may be nesting onsite.

CONFLICT WITH LOCAL POLICIES OR ORDINANCE PROTECTING BIOLOGICAL RESOURCES

Alternative B would result in decreased impacts related to conflicts with local policies and ordinances protecting biological resources due to the reduced tree removal under Alternative B. Table ALT-1 below summarizes the native tree impacts by phase compared to the proposed project. Under Alternative B, an additional 78 native trees would be preserved, which represents an 23.3% reduction in number of trees removed compared to the proposed project.

Table ALT-1: Alternative B Tree Removal Reductions

	Phase 1	Phase 2	Phase 3
Native trees to be removed under proposed project	123	199	14
Native trees that would be preserved under Alternative B	34	44	0
Percent reduction in native tree removal	27.6%	22.1%	0%

1. The tree number represented above are trees thar are in good to fair health and would require mitigation per General Plan policy.

CONFLICTS WITH AN ADOPTED HCP

Alternative B would result in similar impacts related to potential conflicts with an adopted HCP. The analysis for the project demonstrated that impacts related to conflicts with a HCP would less than significant. The proposed changes under Alternative B would not change the project in a way that would negate the analysis or less than significant conclusion for Alternative B.

GREENHOUSE GAS EMISSIONS

Alternative B would result in impacts related to greenhouse gases that would be slightly reduced compared to the proposed project. Under Alternative B, the daily impacts associated with Greenhouse Gas Emissions would be similar, but because the overall footprint is reduced, the total greenhouse gas emissions over the life of the project would be reduced compared to the proposed project. The CEQA threshold for operational greenhouse gas emissions is based on an annual rate of emissions. When considering the maximum emissions emitted per year, Alternative B would result in similar rates of greenhouse gas emissions per year.

Cultural Resources

Alternative B would result in impacts related to Cultural Resources that would be reduced compared to the proposed project. Under Alternative B, there remains a probability that previously undocumented, subsurface resources could be encountered during project implementation. As such, the mitigation for the proposed project would also apply to Alternative B. Because the overall area of disturbance under Alternative B is reduced, the probably of encountering additional resources would also be reduced.

Geology and Soils

Alternative B would result in impacts related to Geology and Soils that would be similar in nature to the proposed project. The proposed project would result in less than significant impacts to Geology and Soils with compliance with existing regulations including Sacramento County Municipal Code Chapter 16.44, the Statewide General Permit for Stormwater Discharges Associated with Industrial Activities (Order 2014-0057-DWQ) (Industrial General Permit), and SMARA. Alternative B would also be subject to the same existing regulations as the proposed project.

Hazards and Hazardous Materials

Alternative B would result in impacts related to Hazards and Hazardous Materials that would be slightly reduced compared to the proposed project. Under Alternative B, the areas that would be removed from the mining footprint are not within Excavation Restriction Areas as delineated by the PCD. Mitigation for the proposed project would also apply to Alternative B in the event that there is an inadvertent encounter with foreign matter during project implementation. Because the overall area of disturbance under Alternative B is reduced, the probably of encountering an inadvertent, subsurface hazardous material would also be reduced.

Hydrology and Water Quality

Alternative B would result in similar impacts related to Hydrology and Water Quality compared to the proposed project. The proposed project would result in less than significant impacts to Hydrology and Water Quality with compliance with existing regulations including SMARA, Federal Clean Water Act, the Porter-Cologne Water Quality Control Act, County ordinances, Regional Water Quality Control Board and the State Water Resources Control Board. Alternative B would also be subject to the same existing regulations as the proposed project. Additionally, Alternative B would also require use of water for dust suppression. While the footprint would be slightly reduced, annual production at the mine would remain the same, and water would be obtained from the same sources as the proposed project (Teichert Grantline plant), which is an existing water source used for Plant operations.

Land Use

Alternative B would result in similar impacts related to Land Use as the proposed project. The project would result in less than significant impacts related to potential conflicts with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating and environmental impact. Similarly, a reduced footprint would be

subject to the same policies and regulations, and there would be no conflicts as a result of a reduction in the project footprint.

Noise

Alternative B would result in slightly reduced impacts related to Noise compared to the proposed project. Impacts for the proposed project were concluded to be less than significant with mitigation due to the potential for phase 2 of the project to exceed noise standards in proximity to residential uses associated with the Easton development, in the event residential uses were constructed prior to implementation of phase 2. Alternative B would reduce the project footprint such that there would be a less mining activities and potential future residential uses along the northern edge of the project boundary. However, the mitigation measures that are applicable to the proposed project would still be appropriately applied to Alternative B as well.

Tribal Cultural Resources

Alternative B would result in impacts related to Tribal Cultural Resources that would be reduced compared to the proposed project. Under Alternative B, there remains a probability that previously undocumented, subsurface resources could be encountered during project implementation. As such, the mitigation for the proposed project would also apply to Alternative B. Because the overall area of disturbance under Alternative B is reduced, the probably of encountering additional resources would also be reduced.

Consistency with Project Objectives

No Project (Alternative A)

The No Project Alternative would not achieve any of the project objectives.

Reduced Footprint (Alternative B)

The Reduced Footprint Alternative would meet most of the basic project objectives, but to a lesser degree, compared to the proposed project. Alternative B would not meet Objective 1, because additional avoidance areas would not maximize onsite extraction of available dredge and sand reserves, but because the grading footprint is reduced only slightly, approximately 30 acres of the 991.5 acres (about 3%), a production rate of up to 3 million tons per year would still be achievable through most of the rest of the project, and for a time period of nearly 20 years (Objectives 2 and 3), consistent with the project objectives. Alternative B would be consistent with Objective 4, as the Alternative would utilize the transportation of mined material to the offsite, separately permitted Grantline plant. Alternative B partially achieves Objectives 5 and 6. Alternative B would implement a reclamation plan that would prepare the large majority of the site to a readily adaptable use for future development, but would avoid approximately 30 acres of area that would still be encumbered by dredge tailings. However, if there was a desire to further develop the Aerojet site post-reclamation, the remaining dredge tailings may require removal under a subsequent effort.

SUMMARY OF COMPARISON OF ALTERNATIVES

For comparison purposes, Table ALT-2 provides the impacts of the proposed project before mitigation and Alternatives A and B.

- Less: Indicates the impact is less than the proposed project
- Similar: Indicates the impact is equal or similar to the proposed project
- Greater: Indicates the impact is greater than the proposed project

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Based on the comparison of impacts in Table ALT-2 below, Alternative A, the No Project alternative, is environmentally superior. CEQA Guidelines Section 15126.6(e)(2) provides that an environmentally superior alternative will be identified among the alternatives evaluated in an EIR. In addition, if the environmentally superior alternative is the No Project Alternative, the EIR will identify an environmentally superior alternative among the other alternatives.

Therefore, the environmentally superior alternative is Alternative B, the Reduced Footprint alternative. Alternative B would result in reduced impacts with respect to seven impact areas (Air Quality, Biological Resources, Greenhouse Gas Emissions, Cultural Resources, Hazards and Hazardous Materials, Noise and Tribal Cultural Resources). Alternative B would meet most of the basic project objectives, although some to a lesser degree than the proposed project. However, while impacts are reduced under Alternative B, the significant and unavoidable impacts of the project (i.e., Impacts AQ-1, BR-2 and BR-5) would also remain significant and unavoidable under Alternative B.

Table ALT-2: Summary of Environmental Effects of the Alternatives Relative to the Proposed Project

Environmental Topic	Proposed Project	Alternative A: No Project	Alternative B: Reduced Footprint
Aesthetics	LTS	Less	Similar
Air Quality	SU (PM emissions)	Less	Less
Biological Resources	SU (native trees and oak woodland)	Less	Less
Greenhouse Gas Emissions	LTS	Less	Less
Cultural Resources	LTSM	Greater	Less
Geology and Soils	LTS	Less	Similar
Hazards and Hazardous Materials	LTSM	Less	Less
Hydrology and Water Quality	LTS	Similar	Similar
Land Use	LTS	Similar	Similar
Noise	LTSM	Similar	Less
Tribal Cultural Resources	LTSM	Greater	Less

LTS: Less than Significant; LTSM: Less than Significant with Mitigation; SU: Significant and Unavoidable.

15 CUMULATIVE IMPACTS

INTRODUCTION

A cumulative impact consists of an impact that is created by the combination of the project evaluated in the EIR together with other past, present, and reasonably foreseeable projects causing related impacts.

The beginning of the cumulative impact analysis includes a description of the cumulative analysis methodology and the geographic or temporal context in which the cumulative impact is analyzed (e.g., the Sacramento County, the Sacramento Valley Air Basin, other activity concurrent with project construction). In some instances, a project-specific impact may be considered less than significant, but when considered in combination with other cumulative projects or activities, the impact may be considered significant or potentially significant.

As noted above, where a cumulative impact is significant when compared to existing or baseline conditions, the analysis must address whether the project's contribution to the significant cumulative impact is "considerable." If the contribution of the project is considerable, then the EIR must identify potentially feasible measures that could avoid or reduce the magnitude of the project's contribution to a less-than-considerable level. If the project's contribution is not considerable, it is considered less than significant, and no mitigation of the project contribution is required

SCOPE OF CUMULATIVE ANALYSIS

METHODOLOGY

Section 15130 of the State CEQA Guidelines indicates that the level of detail of the cumulative analysis need not be as great as for the project impact analyses, that it should reflect the severity of the impacts and their likelihood of occurrence, and that it should be focused, practical, and reasonable. To be adequate, a discussion of cumulative effects must include the following elements:

> Either (a) a list of past, present and probable future projects, including, if necessary, those outside the agency's control, or (b) a summary of projections contained in an adopted general plan or related planning document, or in a prior certified EIR, which described or evaluated regional or area-wide conditions contributing to the cumulative impact, provide that such documents are referenced and made available for public inspection at a specified location.

For the cumulative analysis within this EIR, the list of past, present and probable future project approach was utilized, as provided by the County and summarized in Table CI-1. The effects of past, present, and near future projects on the environment are

reflected by the existing conditions in the project area as described under each resource topic. Probable future projects are those in the project vicinity that have the possibility of interacting with the project to generate a cumulative impact (based on proximity and construction schedule) at the time of the publication of the Notice of Preparation (November 9, 2022) and either:

- are partially occupied or under construction,
- have received final discretionary approvals,
- have applications accepted as complete by local agencies and are currently undergoing environmental review, or
- are proposed projects that have been discussed publicly by an applicant or that otherwise become known to a local agency and have provided sufficient information about the project to allow at least a general analysis of environmental impacts.

CUMULATIVE IMPACT ANALYSIS METHODOLOGY

Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. CEQA Guidelines Section 15130(a)(3) states that an EIR may determine that a project's contribution to a significant cumulative impact would be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution would be rendered less than cumulatively considerable.

For purposes of this EIR, the project would have a significant cumulative effect if it meets either one of the following criteria:

- The cumulative effects of related projects (past, current, and probable future projects) without the project are not significant but the project's incremental impact is substantial enough, when added to the cumulative effects, to result in a significant impact; or

- The cumulative effects of related projects (past, current, and probable future projects) without the project are already significant and the project represents a considerable contribution to the already significant effect. The standards used herein to determine "considerable contribution" are that the impact either must be substantial or must exceed an established threshold of significance.

The analysis herein evaluates whether, after adoption of project-specific mitigation, the residual impacts of the project would cause a cumulatively significant impact or would contribute considerably to existing/anticipated (without the project) cumulatively significant effects.

Table CI-1: Cumulative Project List

Project Number	Project Name	Location	Description	Status
	Unincorporated Sacramento County			
1	Vineyard Springs Comprehensive Plan	South-central portion of Sacramento County	2,650 acres bounded by Gerber Road to the north, Calvine Road to the south, Excelsior Road on the east, and Bradshaw Road on the west	Approved 2000
2	North Vineyard Station Specific Plan	South-central portion of Sacramento County	1,594 acres bound by Florin Road to the north, Gerber Road to the south, Vineyard Road to the east, and Elder Creek on the west	Approved 1998
3	Florin Vineyard Gap Community Plan	Within the community plan areas of Vineyard and South Sacramento	3,872 acres bounded by Elder Creek Road on the north, Bradshaw Road on the east, Churchill Downs neighborhood to the south, and Union Pacific Railroad tracks on the west	Approved 2010
4	Mather Airport Master Plan	10425 Norden Ave, Mather	Establishes a program for modifications of existing facilities and development of new facilities through 2035	Approved 2014, Amended 2016
5	NewBridge Specific Plan	Eastern Sacramento County along SR 16	1,095 acres located north of Jackson Rd, east of Eagles Nest Rd, west of Sunrise Blvd and south of Kiefer Blvd.	Approved 2020
6	Mather South Community Master Plan	Eastern Sacramento County along SR 16	884 acres located north of Kiefer Blvd, east of Eagles Nest Rd, west of Sunrise Blvd and south of Douglas Rd.	Approved 2020
7	Jackson Township Specific Plan	Eastern Sacramento County along SR 16	1,391 acres east of Excelsior Road and SR 16, west of Eagles Nest Road, and south of Keifer Boulevard	Approved 2022
8	Stoneridge Quarry	Eastern Sacramento County south of Highway 50	Quarry mining and processing of materials on 619 acres of a 1,360-acre property	Approved 2011
9	Teichert Quarry	Eastern Sacramento County south of Highway 50	Quarry mining and operation of a processing plant on 380 acres of a 584-acre property for 25 years	Approved 2010

Project Number	Project Name	Location	Description	Status
10	Easton Place and Glenborough at Easton	Eastern Sacramento County south of Highway 50	8,500 acres located east of the City of Rancho Cordova, south of Highway 50 and south of Folsom Blvd, west of Prairie City Rd, and north of White Rock Rd.	Approved 2008
11	West Jackson Highway Master Plan	Bounded by Jackson Highway (State Highway 16), Kiefer Boulevard, and Goethe Road to the north; portions of Elder Creek Road and Florin Road to the south; the City of Sacramento to the west; and Excelsior Road to the east	484 parcels totaling approximately 5,913 acres for residential development (16,484 units); commercial, employment, industrial land (988 acres); parks and open spaces (2,101 acres); six elementary schools, one middle school, and one high school	Approved June 2025
1	Prairie City State Vehicular Recreation Area Proposed Road and Trail Management Plan	South of White Rock Road, between Sunrise Boulevard and Prairie City Road	The Prairie City State Vehicle Recreation Area (SVRA) Road and Trail Management Plan (RTMP) provides a specific and detailed management direction for the off-highway vehicle (OHV) route systems within nine management areas in Prairie City SVRA, guiding their future development, operation and maintenance.	Approved 2024
3	Grant Line East Mine Use Permit Amendment (PLNP2021-00135 and 95-0658)	3500 Grant Line Road, Rancho Cordova, CA 95742	Extend existing aggregate mining operations through July 2046. No new or expanded activities are proposed	Approved October 2022
	Coyote Creek Agrivoltaic Ranch	Eastern Sacramento County, south of U.S. Route 50, northwest of Rancho Murieta, southeast of the Prairie City State Vehicle Recreation Area (PCSVRA), and	The project is a 200-megawatt (MW) alternating current (AC) photovoltaic (PV) solar energy generating facility and associated battery energy storage system (BESS) on parcels that total approximately 2,700 acres.	Approved November 2025

Project Number	Project Name	Location	Description	Status
		south of White Rock Road.		
	Sloughhouse Solar	Southwest of the intersection of Meiss Road and Dillard Road	The project is a 50-megawatt (MW) solar energy facility on an approximately 381-acre project site, and consists of solar-energy generation, energy storage, and electrical distribution facilities.	Construction complete
	City of Rancho Cordova			
12	Arboretum	Within the Grant Line North Planning Area	1,349 acres bounded by Highway 16 to the south, Grant Line Road to the east, Kiefer Boulevard to the north, and Sunrise Boulevard to the west	Currently Inactive
13	Suncreek Specific Plan	Located in southern Rancho Cordova	Development of approximately 1,264 acres. Sunrise Boulevard bounds the Plan Area on the west and Grantline Road bounds it on the east. The future extension of Chrysanthy Boulevard will form the north boundary of the eastern most portion of the plan, and Kiefer Boulevard runs east to west through the Plan Area.	Approved 2013
14	Sunridge Ranch Specific Plan	Located in southern Rancho Cordova	2,606 acres south of Douglas Road, east of Sunrise Boulevard, and north of Grantline Road	Approved 2002.
15	Rio del Oro Specific Plan	Located in central Rancho Cordova	3,828 acres south of White Rock Road, east of Sunrise Boulevard, and north of Douglas Road	Approved 2010.
16	Westborough Specific Plan	Located in central Rancho Cordova	The Specific Plan proposes 7,130 residential units, approximately 340acres of commercial uses, three schools, approximately 83 acres of parks, approximately 17 acres of neighborhood green space, approximately 260 acres of open space, and approximately 57 acres of preserve land for sensitive biological species.	In Process
17	Rancho Cordova General Plan	City of Rancho Cordova	All land uses assumed in the City of Rancho Cordova General Plan	Approved

Project Number	Project Name	Location	Description	Status
9	Capital Southeast Connector: D2 Expressway project	Grant Line Road between Douglas Road and White Rock Road	Reconstruct and widen Grant Line Road from two lanes to four lanes between Douglas Road and White Rock Road and signalize the Raymer Way intersection	Design underway
	City of Folsom			
18	Folsom South of 50 Specific Plan	Eastern Sacramento County, south of US 50 and west of Folsom city limits	3,510 acres south of US 50, north of White Rock Road, east of Prairie City Road, and west of Sacramento/El Dorado County Line. Closest to the project area are recently approved Toll Brothers at Folsom Ranch residential subdivisions.	Approved 2011. Subsequent amendments occurred in 2014, 2015, 2016, 2017, 2018, 2020, 2021, 2024 and 2025

Sources:

- *City of Rancho Cordova: https://www.cityofranchocordova.org/departments/community-development/planning/planning-division-document-library*
- *City of Folsom: https://www.folsom.ca.us/government/community-development/planning-services/folsom-plan-area*
- *CEQAnet: Folsom (https://www.folsom.ca.us/government/community-development/planning-services/folsom-plan-area)*
- *CEQAnet: https://ceqanet.opr.ca.gov/*

CUMULATIVE ISSUE AREAS

Cumulative impacts for each technical area are discussed below. Significance criteria, unless otherwise specified, are the same for cumulative impacts as project impacts for each environmental topic area. With the exception of resource categories in which separate modeling of cumulative conditions has been conducted for evaluation against the established threshold (i.e., air quality, greenhouse gas, noise), resource evaluations are presented holistically below. When considered in relation to other probable future projects, cumulative impacts to some resources could be significant and more severe than those caused by the project alone.

AESTHETICS

CUMULATIVE SETTING

The viewshed for the cumulative aesthetics setting is located in eastern Sacramento County, which encompasses the project site and vicinity and includes viewing groups which are mostly composed of people traveling along roadways which traverse the viewshed, such as White Rock Road, Prairie City Road and Grant Line Road.

The projects listed in Table CI-1 are in the general vicinity of the project area that would alter the visual character of the area. The approved Easton and Glenborough at Easton Master Plans in Sacramento County, as well as large master plan level developments in Rancho Cordova and City of Folsom (south of 50) will result in long term, significant changes to the viewshed through buildout of the cumulative scenario.

PROPOSED PROJECT CUMULATIVE IMPACTS EVALUATION

As discussed in Chapter 3, “Aesthetics,” the baseline condition of the project site is not one that is considered high quality from an aesthetics perspective. The project would place into the area a new visual element that is not cohesive with the existing elements in the form of heavy equipment, but mining activities are temporary, and in most cases would be naturally screened through distance, terrain and vegetation. Upon completion of mining, the reclamation plan has specific performance measures that will revegetate the site with grasses resulting in graded flats where before one saw sloped cobbles, industrial uses and grass fields. Additionally, public views of the project site are obscured by discontinuous security fencing, foliage, and artificial berms. Therefore, the proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. As such, the project’s contribution to the cumulative impacts related to changes in viewshed would be ***less than significant.***

Cumulative development projects would result in greater lighting and glare in the vicinity, due to additional nighttime lighting that accompanies urban development. In the event that later phases of the proposed project are implemented after portions of the Easton Land Use Master Plan are developed, the project would implement Mitigation Measure AE-1 reduce project-level impacts related to new sources of light and glare.

The project's contribution to cumulative impacts related to light and glare would be ***less than significant.***

AIR QUALITY

CUMULATIVE SETTING

The project site is within the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD), specifically within the Sacramento Valley Air Basin (SVAB). The SVAB is considered the cumulative setting for regional air quality impacts. Sacramento County is currently in nonattainment for ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) with respect to the California ambient air quality standards (CAAQS) and is in nonattainment for ozone and $PM_{2.5}$ with respect to the national ambient air quality standards (NAAQS).

Ozone impacts are the result of cumulative emissions from numerous sources in the region and transport from outside the region. Ozone is formed in chemical reactions involving reactive organic gases (ROG), oxides of nitrogen (NO_X), and sunlight. All but the largest individual sources emit NO_X and ROG in amounts too small to have a measurable effect on ambient ozone concentrations by themselves. However, when all sources throughout the region are combined, they can result in severe ozone problems.

Particulate matter (PM), including PM_{10} and $PM_{2.5}$, have a similar cumulative regional emphasis when they are entrained into the atmosphere and build to unhealthful levels over time. PM also has the potential to cause significant local problems during periods of dry conditions accompanied by high winds, and during periods of heavy earth–disturbing activities. PM may have cumulative local impacts if, for example, several unrelated grading or earth moving activities are underway simultaneously at nearby sites. Operation-related PM is less likely to result in local cumulative impacts as operational PM sources tend to be spread throughout the region (i.e., vehicles traveling on roads), not affecting any one receptor. However, substantial increases in traffic on roadways already experiencing high traffic volumes may result in considerable contributions to nearby existing land uses.

Although carbon monoxide (CO) can accumulate with traffic at intersections, it is recommended to be evaluated locally, and not regionally because it disperses rapidly with distance from the source under normal meteorological conditions. Toxic air contaminants (TACs) behave similarly. Therefore, CO and TACs are not significant at a regional air-basin level.

Cumulative development as identified in Table CI-1 would continue to increase the concentration of air pollutants from traffic, natural gas combustion in buildings, area sources, and stationary sources, but would be partially offset by state and federal policies that set emissions standards for mobile and non-mobile sources. Furthermore, cumulative projects have been or will be subject to individual environmental analysis and mitigation measures, as necessary, in addition to regulatory compliance to reduce project-specific impacts to the greatest extent feasible. Nonetheless, because of the

existing nonattainment status of Sacramento County (as discussed above), there is an existing adverse cumulative condition regarding air quality. Therefore, ROG, NO_X, and PM emissions from cumulative development are cumulatively significant in the SVAB.

PROPOSED PROJECT CUMULATIVE IMPACTS EVALUATION

LONG-TERM OPERATIONAL EMISSIONS OF CRITERIA AIR POLLUTANTS AND PRECURSORS

Sacramento County is in nonattainment for ozone and PM_{10} with respect to the CAAQS, and for ozone and $PM_{2.5}$ with respect to NAAQS. Construction activities in the region would emit additional particulate matter and ozone precursors that may conflict with attainment efforts in the county. Because the region is in nonattainment, the existing cumulative condition is adverse, and any additional emissions would exacerbate that condition. SMAQMD has established construction emission thresholds for individual construction and operational projects, which determines whether that particular project's emissions would be cumulatively considerable (SMAQMD, 2020). As detailed in Impact AQ-1, implementation of the proposed project would result in project-related criteria pollutants emissions that are below thresholds, with the exception of operational $PM_{10,}$ which would exceed SMAQMD thresholds. Implementation of Mitigation Measures AQ-1, AQ2, and AQ-3 would reduce PM_{10} emissions but not to a less than significant level. Therefore, the proposed project's contribution to criteria pollutants emissions would be cumulatively considerable for PM_{10}. As such, the overall cumulative impact with respect to PM_{10} would be ***significant and unavoidable*.**

EXPOSURE OF SENSITIVE RECEPTORS TO TACS

TACs, which are examined under Impact AQ-2, are also pollutants of localized concern. High concentrations of TACs within urban areas may result from heavy vehicle traffic, industrial sources, or other sources, which when in close proximity to one another could result in unhealthy air quality conditions for nearby receptors, which would be considered a significant cumulative impact. However, due to the highly dispersive properties of TACs evaluated, emissions do not typically combine from construction or new stationary sources with other adjacent sources to result in cumulative impacts. Because of the localized nature of TACs and that the proposed project's impacts related to TACs emissions would be less than significant, the proposed project's contribution to cumulative TACs impacts would not be cumulatively considerable. The overall cumulative impact would remain ***less than significant.***

CONFLICT WITH AN APPLICABLE AIR QUALITY PLAN

As discussed in Chapter 4, "Air Quality", the Sacramento Metropolitan Air Quality Management District's (SMAQMD's) CEQA Guide contains guidance for analyzing construction and operational impacts. As described in the SMAQMD CEQA Guide, the SMAQMD approach to thresholds of significance is key to determining whether a project's individual emissions would result in a cumulatively considerable adverse contribution to the SVAB's existing air quality conditions (SMAQMD, 2021). Sacramento County is currently in nonattainment for ozone and PM10 with respect to the California Ambient Air Quality Standards, and in nonattainment for ozone and PM2.5 with respect to the National Ambient Air Quality Standards. As such, a significant cumulative adverse

air quality impact exists within Sacramento County with respect to ozone precursors (i.e., oxides of nitrogen [NO_X] and reactive organic gases [ROG]) and particulate matter (i.e., PM10 and PM2.5).

SMAQMD provides guidance for evaluating air quality impacts. In accordance with SMAQMD guidance, the proposed project was evaluated for consistency with the most recently adopted air quality plan in the region. Specifically, the proposed project was compared to the *2023 Sacramento Regional Plan for the 2015 70 ppb 8-Hour Ozone Standard*, adopted in October 2023, and the 2020 MTP/SCS. Implementation of the proposed project would not exceed SMAQMD criteria pollutants emissions thresholds related to NO_X, ROG and PM2.5 with implementation of mitigation measures AQ-1, AQ-2 and AQ-3, and thus would not conflict with applicable air quality plans. The project would result in an exceedance of the threshold for operational PM10 emissions. However, because the proposed project would not induce growth and would not result in a change in land use type, SMAQMD Guidance states that emissions from the proposed project would not exceed those accounted for in the *2023 Sacramento Regional Plan for the 2015 70 ppb 8-Hour Ozone Standard* or SACOG's MTP/SCS. Therefore, the project's contribution to cumulative impacts related to conflict with an applicable air quality plan would not be cumulatively considerable. The cumulative impact would be ***less than significant.***

EXPOSURE OF SENSITIVE RECEPTORS TO ODORS

Odors emitted in the exhaust of on-site engines during construction, particularly diesel-fueled engines, may be considered offensive to some individuals. The generation of these odorous emissions and any potential exposure of receptors to these odors would vary on a day-to-day basis depending on the type and location of on-site activities taking place and atmospheric conditions. Such emissions would be intermittent in nature and would dissipate rapidly with increasing distance from the source. For these reasons, the proposed project would not result in the exposure of a substantial number of people to objectionable odors. The proposed project's contribution to cumulative odors impacts would not be cumulatively considerable. As such, overall cumulative impact would remain ***less than significant.***

MITIGATION MEASURES

AQ-1, AQ-2, and AQ-3

BIOLOGICAL RESOURCES

CUMULATIVE SETTING

Generally, the geographic extent of cumulative impacts on biological resources consists of Sacramento County that supports similar biological resource values and functions to those of the project site. Past and present actions by humans have substantially altered biological resources in Sacramento County, specifically, compared to historical conditions. More recently, the large-scale conversion of agricultural habitats to urban land uses within the county has resulted in substantial loss of habitat for species such

as state-listed Swainson's hawk that have adapted to use agricultural habitats in response to loss of their natural habitats.

Past, present, and foreseeable future urbanization in Sacramento County has contributed, and continues to contribute substantially to the loss of grassland, wetland, and oak woodland habitats that are important to many species in the region, including state and federally listed species like Swainson's hawk, vernal pool fairy shrimp, and vernal pool tadpole shrimp. The continued conversion of natural habitats would contribute to the ongoing decline of these habitats in the region and in the state.

Furthermore, cumulative projects would be subject to individual environmental analysis and mitigation measures, as necessary, in addition to regulatory compliance to reduce project-specific impacts to the greatest extent feasible. Nonetheless, the loss of grassland, wetland, and oak woodland habitats and continued conversion of natural habitats contribute to an existing significant cumulative impact.

PROPOSED PROJECT CUMULATIVE IMPACTS EVALUATION

SPECIAL STATUS SPECIES

As described in Chapter 5, "Biological Resources," proposed project implementation could result in potentially significant impacts on special status plants, vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle (VELB), western spadefoot, northwestern pond turtle, Swainson's hawk, burrowing owl, tricolored blackbird, ferruginous hawk, loggerhead shrike, northern harrier, white-tailed kite, Crotch's bumble bee, pallid bat, and western red bat, native birds protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. Implementation of Mitigation Measures BR-1a, BR-1b, BR-1c, BR-1d, BR-1e, BR-1f, BR-1g, BR-1h, BR-1i, BR-1j, BR-1k, BR-1l, and BR-1m, would offset the proposed project's contribution to cumulative special status species impacts by avoiding impacts on these species and habitats or compensating for habitat and species impacts. Therefore, the project would not result in considerable contribution to an existing significantly adverse cumulative condition related to special status species, and impacts would be ***less than significant with mitigation incorporated.***

MITIGATION MEASURES

BR-1a, BR-1b, BR-1c, BR-1d, BR-1e, BR-1f, BR-1g, BR-1h, BR-1i, BR-1j, BR-1k, BR-1l, and BR-1m

WOULD THE PROJECT HAVE A SUBSTANTIAL ADVERSE EFFECT ON STATE OR FEDERALLY PROTECTED WETLANDS (INCLUDING, BUT NOT LIMITED TO MARSH, VERNAL POOL, COASTAL, ETC.) THROUGH DIRECT REMOVAL, FILLING, HYDROLOGICAL INTERRUPTION, OR OTHER MEANS

The project area contains 30.505 acres of protected state or federally protected wetlands or surface waters. A very small amount of vernal pools and wetlands and other waters would be permanently impacted, but Mitigation Measure BR-3 (Avoid, Minimize, Restore, and Mitigate for Impacts on State and Federally Protected Wetlands and Other

Waters) would avoid, minimize and compensate for potential impacts. This impact would be cumulatively ***less than significant with mitigation***.

MITIGATION MEASURES

BR-3

WOULD THE PROJECT CONFLICT WITH ANY LOCAL POLICIES OR ORDINANCES PROTECTING BIOLOGICAL RESOURCES SUCH AS A TREE PRESERVATION POLICY OR ORDINANCE

The project site contains a total of 3,096 oak trees six inches or greater in dbh, including 1,794 interior live oaks, 1,137 blue oaks, 152 valley oaks, 9 oracle oaks, and 4 California black oaks. Project implementation would require the removal of some of the native trees due to grading and extraction activities. Removal of native oak trees requires in kind mitigation pursuant to General Plan policies CO-139 and CO-140.

While the project does not propose to remove large stands of native oak woodlands, removal of a number of oak trees would be required. As such, the project would also result in the loss of oak woodland canopy. The project would mitigate for removal of native oak trees, consistent with County General Plan policy through implementation of mitigation measures addressing native tree impacts in section BR-5 of the Biological Resources chapter. The Sacramento County General Plan Update Final EIR (Sacramento County, 2011) recognized that even with implementation of projects consistent with General Plan policies such as CO-140, the significant impacts on native trees and tree canopy could be reduced, but not to a less-than-significant level at the scale of the County, because there would still be a substantial temporal loss of trees/tree canopy in the intervening years between when the seedlings are planted and when they mature to a condition that fully replaces the mature trees lost. The temporal loss of oak species contributes to the ongoing regional and statewide loss of oak woodlands. This impact would be cumulatively ***significant and unavoidable.***

MITIGATION MEASURES

BR-5

CONFLICT WITH THE PROVISIONS OF AN ADOPTED HABITAT CONSERVATION PLAN, NATURAL COMMUNITY CONSERVATION PLAN, OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HABITAT CONSERVATION PLAN

The project is not within the Urban Development Area of the SSHCP and is not a covered activity. The project would obtain the necessary permits from the same state and federal agencies that are implementing entities of the SSHCP. The project would implement mitigation measures consistent with mitigation strategies of the SSHCP, and the project would not interfere with existing or future preserve lands. The project would not impede the ability of the South Sacramento Conservation Agency to achieve the implementation goals outlined in the HCP. The cumulative impacts related to potential conflicts with an HCP would be ***less than significant.***

MITIGATION MEASURES

None recommended.

GREENHOUSE GAS EMISSIONS

CUMULATIVE SETTING

Prominent GHGs contributing to the greenhouse effect are CO_2, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. Climate change is a global problem caused by global pollutants and is inherently cumulative. Therefore, the cumulative setting for climate change is global, which is experiencing an existing adverse cumulative condition.

PROPOSED PROJECT CUMULATIVE IMPACTS EVALUATION

As stated in Chapter 6, "Greenhous Gas Emissions," the issue of global climate change is inherently a cumulative issue because the GHG emissions of individual projects cannot be shown to have any material effect on global climate. Therefore, the proposed project's impact on climate change is addressed only as a cumulative impact. As discussed in Chapter 6, "Greenhouse Gas Emissions", implementation of the proposed project would result in less-than-significant project-level impacts. Therefore, the proposed project, when combined with other cumulative projects, would not result in a considerable contribution to a significant cumulative impact related to GHG emissions. The cumulative impact related to GHG emissions would be ***less than significant*.**

CULTURAL RESOURCES

CUMULATIVE SETTING

The geographic scope for the analysis of cumulative impacts to cultural resources is Sacramento County. Archaeological resources exist throughout the cumulative area and are most likely to be intact in areas that have not been previously disturbed through urbanization or mining. Because all significant archaeological resources are unique and nonrenewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. The loss of any one archaeological site affects all others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region. Furthermore, cumulative projects would be subject to individual environmental analysis and mitigation measures, as necessary, in addition to regulatory compliance to reduce project-specific impacts to the greatest extent feasible. As such, cumulative development in the region could result in ongoing substantial adverse changes in the significance of cultural resources, resulting from urban development and conversion of natural lands, which results in a significant cumulative impact to cultural resources.

The study area for the historic resources cumulative impacts analysis is the south fork of the American River area, specifically as related to other existing tailing deposits and eligible districts representing late 19th to early 20th century mining in Sacramento

County. Although impacts to historical resources tend to be site-specific, cumulative impacts to historical resources occur when the project and related projects, holistically, substantially diminish the number of historic resources within the same or similar context or property type.

Proposed Project Cumulative Impacts Evaluation

The project site contains features and resources that contribute to wider districts relating to the history of placer mining, the Gold Rush era, and Sacramento County history, but they no longer reflect a preserved characterization of any one historic period, mining type, or unique event. The project site has been evaluated as ineligible for NRHP or CRHR inclusion, which also suggests that any cultural resources encountered during project activities would be unlikely to yield new information or scientific inquiry. The project would not have the potential to directly or indirectly affect historical or archaeological resources outside of the study area, so the project would not have the potential to contribute to a cumulative impact outside of the study area.

The project would comply with the existing state law regarding the discovery of human remains, and the existing regulatory requirement related to discovery of human remains includes halting work at the site and immediately contacting the County Coroner, the result of compliance with this state regulatory requirement results in no cumulative impacts with respect to human remains would occur.

The project will implement mitigation measures CR-1, CR-2a, CR-2b, CR-2c and CR-3 for cultural resources, thereby ensuring proper identification, treatment, and preservation of any resources, and reducing project impacts on cultural resources to less than significant levels. Therefore, the contribution of the project to cumulative impacts of cultural resources would not be cumulatively considerable, and cumulative impacts on cultural resources would be ***less than significant.***

Mitigation Measures

CR-1, CR-2a, CR-2b, CR-2c, and CR-3

Geology, Soils, and Mineral Resources

Cumulative Setting

Impacts on geology and soils are generally localized and do not result in regionally cumulative impacts. Unless a project would alter the soils and rock underlying other adjacent projects or affect surrounding land due to landslides, impacts related to geology and soils would be limited to the project site. Therefore, the geographic scope of cumulative impacts related to geology and soils include development immediately adjacent to the project site.

All developments are subject to, at a minimum, site development and construction standards relative to seismic and other geological conditions that are prevalent with the region, such as the California Building Code standards. Development that disturbs more than 1 acre is subject to compliance with a National Pollutant Discharge Elimination

System (NPDES) permit, including the implementation of BMPs, some of which are specifically implemented to reduce soil erosion or loss of topsoil, and the implementation of a Stormwater Pollution Prevention Plan (SWPPP) through the local jurisdiction. No existing significant cumulative geology or soils impacts are present on or near the project site with compliance of existing regulations.

The geographic scope of potential cumulative impacts related to mineral resources is Sacramento County. Development in the region could preclude mining operations in a manner that could be considered significant in a cumulative setting. Cumulative development could result in a reduction in availability of important designated mineral resources by making certain mineral resources inaccessible for future extraction. As such, due to past and current projects, cumulative impacts to mineral resources in Sacramento County are significant.

Proposed Project Cumulative Impacts Evaluation

As discussed in Chapter 8, “Geology, Soils, And Paleontological Resources”, the project would result in less-than-significant impacts related to geology, soils and paleontological resources with compliance with existing, applicable regulatory requirements. Compliance with SMARA, including CCR Sections 3711 and 3705, as enforced through the Reclamation Plan, would minimize impacts related to topsoil and soil erosion, which would ensure that the project’s contribution to impacts related to soil erosion would not be substantial. Therefore, the proposed project, when combined with other cumulative projects, would not result in a considerable contribution such that a new significant cumulative impact to geology and soils would occur.

In regard to mineral resources, the proposed project would result in less-than-significant impacts as the proposed project is a surface mining project, which would harvest aggregate materials from the site and supply aggregate materials to the region and the state. As such, the proposed project would not preclude mining operations and the proposed project, when considered with other cumulative projects, would not result in a considerable contribution to the significant cumulative impact to mineral resources. Overall, cumulative impacts related to geology, soils, and paleontological resources would be ***less than significant.***

Mitigation Measures

None recommended.

Hazards and Hazardous Materials

Cumulative Setting

The Aerojet Superfund site covers a large area, due to ongoing contamination and cleanup of the groundwater aquifer. Project specific incidents of hazardous materials contamination are more typically isolated to a small area, and these relatively isolated areas of contamination typically do not interact in a cumulative manner with other sites of hazardous materials contamination. Impacts related to emergency vehicle access and evacuation are considered site specific and are not cumulative.

Proposed Project Cumulative Impacts Evaluation

As shown in Plate PD-4 (Aerojet Superfund Site and Operable Units) and discussed in Chapter 9, “Hazards and Hazardous Materials”, the project site overlays contaminated areas associated with the Aerojet Superfund Site, while avoiding disturbance of those areas through 100 foot buffer zones. Aerojet is conducting ongoing groundwater remediation activities in the project area via groundwater extraction and treatment (GET) wells, and also operates groundwater monitoring wells, with oversight from the Central Valley RWQCB and USEPA. Cumulative projects listed above in Table CI-1 would require mitigation measures to reduce any potential impacts related to the Aerojet Superfund Site and ongoing remediation efforts. The project would implement mitigation measures to reduce public or environmental hazards from its location on a Cortese-listed site or potential hazardous material releases to less than significant levels. Therefore, the proposed project would result in a less-than-cumulatively-considerable contribution to any cumulative impact related to construction in a Cortese-listed site or foreseeable upset and accidental release of hazardous materials.

All of the related projects considered in this cumulative analysis, along with the proposed project, would involve the use, temporary storage, and transport of small amounts of hazardous substances used during construction, such as fuels, lubricants, oils, and paint. All materials must be used and stored in compliance with federal, state, and local ordinances, laws, regulations and policies related to hazardous materials, including the County’s requirements for handling and transport of hazardous materials. None of the substances would be acutely hazardous. The proposed project and the related projects considered in this cumulative analysis would not include any usual conditions related to use, storage, or transport of minor amounts of hazardous materials such that an increased likelihood for accidental spills would occur. Furthermore, if any accidental spills were to occur or if any previously unknown hazardous materials were encountered and released into the environment during construction activities, the effects would be site-specific, and therefore the related projects considered in this cumulative analysis would not combine to form cumulatively considerable impacts. Cumulative impacts related to hazards and hazardous materials would be ***less than significant with mitigation incorporated.***

Mitigation Measures

HAZ-1, HAZ-2, HAZ-3, HAZ-4, and HAZ-5

Hydrology, Drainage, and Water Quality

Cumulative Setting

The project site is within the Lower American and Lower Sacramento River watersheds, which are the cumulative watershed boundaries for the evaluation of cumulative effects. Most surface water features on the project site drain from the north and east to the southwest, with Buffalo Creek and Rebel Hill Ditch being the only named surface waters. Buffalo Creek eventually drains to the American River near the Aerojet site. A cumulative impact would occur if the proposed project in combination with the cumulative projects would substantially degrade water quality; decrease groundwater

supplies or interfere with groundwater recharge; or substantially alter existing drainage pattern that would result in increased erosion, flooding, or polluted runoff.

Existing groundwater quality has been degraded as a result of Aerojet's historical operations on the property. These activities include liquid, rocket engine and component testing, solvent storage, engine cleaning, solid waste disposal, water filtration and other activities that involved the handling of chemicals. Types of chemicals that were handled included solvents, fuels, oxidizers, metals, acids, oils, and other miscellaneous compounds. These chemicals have infiltrated the groundwater aquifer in some areas and have been recorded in groundwater wells downgradient. Aerojet is in the process of treating the groundwater and removing harmful contaminants to improve groundwater quality for downgradient water users.

Additional non-point source water pollution from the combination of past, present, and future projects in the watersheds may contribute to a general degradation of water quality over time. With increased urbanization, new land uses and associated impermeable surfaces have and could continue to result in runoff of various pollutants into local and regional waterways. A variety of regulatory programs have been implemented with the goal of halting degradation of water quality and reversing this trend. Several state and federal agencies are involved in these programs, many of which are required by or originate in the federal Clean Water Act (CWA). Nonetheless, a cumulative adverse water quality condition exists.

Proposed Project Cumulative Impacts Evaluation

As discussed in Chapter 10, "Hydrology, Drainage, and Water Quality", the proposed project, similar to other cumulative projects, would be required to comply with applicable federal, state, and local laws and regulations related to hydrology, drainage, and water quality, which would minimize effects to receiving waters within the watersheds as well as groundwater sources. With regulatory compliance and approval of all project-specific permits, the proposed project would result in less-than-significant impacts to hydrology, drainage, and water quality. The project would not introduce new impervious surface to induce additional runoff, impeded flood flows or interfere with groundwater recharge. Therefore, the project would not result in a considerable contribution to a significant cumulative impact related to hydrology, drainage, and water quality, overall cumulative impacts would remain ***less than significant.***

Mitigation Measures

None recommended.

Noise

Cumulative Setting

The cumulative setting for assessment related to noise and vibration is the vicinity of the project site (i.e., within 1,000 feet), which includes land uses with Aerojet, City of Folsom, City of Rancho Cordova and the Easton and Glenborough at Easton Land Use Master Plan areas. Noise impacts typically occur locally because noise levels dissipate

rapidly with increased distance from the source. Based on the spherical spreading of sound, there is typically a 6 dB decrease per doubling of distance. Thus, for cumulative noise impacts to occur, noise sources must combine to result in an increase in noise at the same receptor that otherwise would not experience the increase attributed to the combined (or cumulative) condition. Cumulative projects listed in Table 15-1, have been or will be subject to individual environmental analysis and mitigation measures, as necessary, in addition to regulatory compliance to reduce project-specific impacts the greatest extent feasible. Because noise impacts occur locally (as described above), noise that is contributed from surrounding projects in the cumulative setting do not create a significant cumulative condition related to noise.

Proposed Project Cumulative Impacts Evaluation

As described above, noise impacts are site-specific and only combine when cumulative development is in close proximity to one another. Construction-related noise and vibration are typically considered localized impacts, affecting only receptors closest to construction activities. Therefore, unless construction and/or operation of cumulative projects, including the proposed project, occur in close proximity to each other (i.e., less than 500 feet) and at the same time, noise and vibration from individual construction projects have little chance of combining to create cumulative impacts.

As discussed in Chapter 12, “Noise”, noise impacts associated with the proposed project would be less than significant with incorporation of mitigation measures NO-1 through NO-3 and vibration impacts would be less than significant. Therefore, the proposed project, when combined with other cumulative projects, would not result in a significant cumulative impact related to noise and vibration. The overall cumulative impact would remain ***less than significant with mitigation incorporated.***

Mitigation Measures

NO-1, NO-2, and NO-3

Tribal Cultural Resources

Cumulative Setting

The geographic scope of potential cumulative impacts related to tribal cultural resources is the former territory of the Plains Miwok within Sacramento County. The Sacramento Valley floodplains and the banks of rivers and large streams in the valley and adjacent foothills were occupied and used during the prehistoric, ethnohistoric, and historic periods with the result that archaeological resources, including human remains, are widespread and numerous within the region.

Cumulative projects would be subject to individual environmental analysis and mitigation measures, as necessary, in addition to regulatory compliance to reduce project-specific impacts to the greatest extent feasible. However, because all significant tribal cultural resources are unique and nonrenewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. The loss of any one resource affects all others in a region because these resources are best understood

in the context of the entirety of the cultural system of which they are a part. Therefore, because of past and current projects, cumulative impacts to tribal cultural resources in Sacramento County are significant.

Proposed Project Cumulative Impacts Evaluation

As described in Chapter 13, “Tribal Cultural Resources,” no indigenous or tribal cultural resources have been recorded within the project site or half-mile radius. Where there are numerous reports supporting the likelihood that Nisenan lived near, walked through, and benefitted from tribal cultural resources that once flourished in the project site, no preserved evidence has been found. It is likely that the development and mining history of the project site has displaced any tribal cultural resources that may have been formerly located on the project site.

Additionally, no tribal cultural resources have been identified within the unincorporated county as a result of AB 52 consultation. In the event subsurface tribal resources are uncovered during project implementation, the project would implement mitigation measure TCR-1 which addresses any inadvertent discovery of tribal cultural resources, including cessation of ground-disturbing activities proximate to the discovery and notification of the appropriate tribal representative(s). Therefore, the proposed project, when combined with other cumulative projects, would not result in a considerable contribution to an existing significant cumulative impact related to tribal cultural resources. The cumulative impact would be ***less than significant with mitigation incorporated.***

Mitigation Measures

TCR-1

16 OTHER RESOURCE TOPICS

INTRODUCTION

CEQA Guidelines Section 15126 requires that all phases of a project – planning, acquisition, development, and operation – must be considered when evaluating its impact on the environment. The Executive Summary Chapter and Chapters 3 through 13 present the proposed project's environmental effects, potentially feasible mitigation measures, and conclusions regarding the level of significance of each impact both before and after mitigation. Chapter 14, Alternatives, presents a comparative analysis of alternatives to the proposed project.

This chapter will begin with a discussion of various possible effects of the proposed project that were not discussed in detail in this EIR and are instead listed in this chapter as determined not to be significant, or to have no impact (CEQA Guidelines Section 15128).

OTHER ENVIRONMENTAL TOPICS

Pursuant to CEQA Guidelines Section 15128, this section describes the reasons that various possible effects of the proposed project were determined not to be significant, or to have no impact, and, therefore, are not discussed in detail in this EIR. These determinations were generally made because the identified environmental resources are not present within or around the project site or because implementation of the proposed project would clearly have no effect with respect to these topical issues. The various environmental resources are discussed below and are based on Appendix G of the CEQA Guidelines.

AGRICULTURAL AND FORESTRY RESOURCES

The project site is entirely within an area subject to previous hydraulic mining and was used by Aerojet for rocket manufacturing and testing; accordingly, the project site is identified by the Farmland Mapping and Monitoring Program as "Other Land" and "Urban and Built-Up Land". The project site is not used for agricultural production, is not zoned for agricultural uses, or under a Williamson Act contract. The project site neither contains nor is zoned as forestland or timberland. Therefore, the project would have **no impact** as it relates to agricultural and forestry resources.

ENERGY

Based on Appendix G of the CEQA Guidelines, an impact related to energy is considered significant if the proposed project would do any of the following:

Result in Potentially Significant Environmental Impacts Due to Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources

Implementation of the proposed project would require the extended use of off-road heavy-duty construction equipment and use of a conveyor belt system, resulting in additional diesel fuel and electricity consumption, respectively. Table OR-1 summarizes the estimated annual average energy consumption based on source type for the proposed project

Table OR-1: Proposed Project Annual Average Energy Consumption

Source	Gasoline (gallons / year)	Diesel (gallons / year)	Electricity (kWh / year)
Conveyor Belt System	—	—	558,000
Operational equipment	3,670	197,273	-
Proposed Project total	3,670	197,273	558,000

Notes: gallons / year = gallons per year; kWh / year = kilowatt hours per year

While the proposed project is estimated to consume approximately 3,670 gallons of gasoline, 197,273 gallons of diesel fuel and 558,000 kWh of electricity per year, only the necessary amount of fuel and electricity would be consumed on a yearly basis, dependent on market conditions. By using a conveyor belt system, the proposed project would avoid energy consumption related to off-site haul trucks, as all mined material would be transported off-site via the conveyor. The Grantline plant processing facility relies on materials from surrounding, regional aggregate mine sites, but is limited to processing a permitted amount of material per year. Thus, the proposed project would be implemented as other surrounding aggregate mines reduce or cease production. As a result, the net change in energy use at the Grantline plant facility is not expected to significantly change, as the proposed project would come online in place of other, existing operations in the area. Once the proposed project is complete, consumption of diesel fuel and electricity used for mining operations would cease on the project site.

As SMUD already provides electric service to the property and the extension of the existing conveyor belt system would only require a minimal increase in electricity, implementation of the proposed project would not result in an extraordinary demand such that it would create an adverse physical impact on the provision of electrical services provided by SMUD.

In addition, implementation of the proposed project would continue to provide aggregate material, which is foundational for making a variety of construction products that are in high demand for regional and local construction projects. Implementation of the proposed project would provide a continued supply of sand and gravel material to the Grantline plant, which would allow the Grantline plant to continue to distribute aggregate material throughout Sacramento County. Given its location, the distribution of aggregate material from the existing Grantline plant could help to reduce the need for lengthy transport of aggregate material to project sites, which in turn would help to reduce diesel fuel consumption associated with. aggregate material transport in the Sacramento County area.

For these reasons, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy. Impacts would be ***less than significant.***

Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency

State or local renewable energy or energy efficiency plans applicable to the proposed project include SMUD's 2030 Zero Carbon Plan and 2022 IRP, and the County's 2024 Climate Action Plan (CAP).

While the County's 2024 CAP could be considered an applicable local plan for renewable energy or energy efficiency, CAPs are developed primarily to address GHG emissions resulting from the addition of square footage and parking and the generation of vehicle trips (i.e. physical development and transportation-related sources of GHGs). As the proposed project is an industrial use that does not include additional building square footage nor generate new haul truck trips or additional employee vehicle trips, the reduction strategies in the 2024 CAP are not applicable to this project type. Thus, showing consistency with the County's 2024 CAP is not further evaluated in this analysis.

The heavy-duty construction equipment used for the proposed project would be upgraded over time, where newer equipment tends to be more energy-efficient than older equipment. This would ensure that energy consumption per unit of activity decreases over time, as the construction equipment used for the proposed project is replaced. Additionally, as SMUD already provides electric service to the Grantline processing plant and the extension of the existing conveyor belt system would only require a minimal increase in electricity compared to existing conditions under the approved Grantline project, implementation of the proposed project would not substantially increase demand on SMUD's electrical supply or infrastructure.

While the proposed project is an industrial project that is not the primary focus of SMUD's 2030 Zero Carbon Plan and 2022 IRP or the State's 2022 Scoping Plan, these features (i.e., industrial use with no additional building area, no new haul truck trips or additional employee trips, and upgrade of construction equipment over time) of the proposed project would aid in achieving these plans' overall energy efficiency goals. For these reasons, implementation of the proposed project would not conflict with or obstruct SMUD's 2030 Zero Carbon Plan and 2022 IRP or the State's 2022 Scoping Plan. Impacts would be ***less than significant.***

Population and Housing

The proposed project is not a land development project nor does it include a residential component and as such would not impact population and housing. The proposed project would not involve activities that would displace people or structures, thus not necessitating construction of replacement housing elsewhere. Additionally, the proposed project does not include any development or new public service infrastructure. As discussed under the growth-inducing impacts section of this chapter, although the aggregate produced as a result of the project will be used for future construction, the project in of itself does not directly or indirectly induce population growth. The aggregate

production is based on forecasted market demand, which is based on planned or anticipated development for the Sacramento region; therefore, there would be ***no impact*** related to population and housing.

Public Services

The proposed project is located within the industrial area of the Aerojet campus and does not propose any development that would impede the provision of public services such as fire, emergency and/or police protection services, public school services, libraries or other public services, or increase the demand for such services. The project does not include a residential component and would not impact existing residential development. Therefore, the project would not result in population growth that would increase demand for public services. The project would have ***no impact*** as it relates to physical impacts to or expansion of public services facilities.

Recreation

The project would not directly impact any recreational facilities, and would not develop uses that would necessitate the construction of new recreational facilities. Therefore, the project would have ***no impact*** as it relates to physical impacts to or expansion of recreational facilities

Transportation

Conflict with a Program, Plan, Ordinance, or Policy Addressing the Circulation System, Including Transit, Roadway, Bicycle, and Pedestrian Facilities

Conflict with or be Inconsistent with CEQA Guidelines Section 15064.3, Subdivision (B) – Measuring Transportation Impacts Individually or Cumulatively, Using a Vehicle Miles Traveled Standard Established by the County

Construction

VMT analysis is intended to capture the long-term impacts of a proposed project. The Office of Planning and Research (ORP) Technical Advisory on Evaluating Transportation Impacts in CEQA (ORP, 2018) specifies that for VMT analysis, automobile refers to on-road passenger vehicles, specifically cars and light trucks, and excludes heavy-duty trucks. Therefore, construction activities are not typically subject to VMT analysis. As a result, no analysis of construction VMT is warranted (Sacramento County 2020). Therefore, consistent with the Transportation Analysis Guidelines, there is no conflict with CEQA Guidelines Section 15064.3 and impacts associated with construction would be ***less than significant.***

OPERATIONS

The County Transportation Analysis Guidelines (TAG) establishes VMT guidelines and thresholds that address CEQA Guidelines Section 15064.3. The TAG has established screening thresholds including one that screens out projects that are too small to have any appreciable impact on VMT generation. Specifically, the threshold for small projects is based on a maximum generation of 237 average daily trips (ADT) per day, as calculated using the Institute of Transportation Engineers (ITE) land use codes applicable to the project.

Traffic generated by the proposed project would consist of workers travelling to the mining site for work. VMT from employees traveling to and from the project site would be considered a small project pursuant to the County TAG as outlined above. As such, changes in regional VMT from implementation of the project would be insignificant. Transportation of mined materials would be transported to an existing off-site processing plant via an electric conveyor system. There would be no truck trips on public roadways associated with exportation of mined aggregate from the project site to the Grantline plant. The Grantline plant is an existing operation (including associated truck trips for processed material and employees), and aggregate material from the proposed project would be processed in accordance with the existing, permitted uses at the Grantline plant, so there would not be indirect impacts related to VMT from the Project. Impacts related to VMT are ***less than significant***.

SUBSTANTIALLY INCREASE HAZARDS DUE TO A GEOMETRIC DESIGN FEATURES (E.G., SHARP CURVES OR DANGEROUS INTERSECTIONS) OR INCOMPATIBLE USES (E.G., FARM EQUIPMENT)

The proposed project does not include any off-site road improvements nor any improvements within surrounding roadways around the project. Implementation of the project would take place internally on the Aerojet campus, closed to the public. Access to the site would take place at White Rock Road and Nimbus Road, where there is existing, restricted access to the Aerojet campus. Any improvements to the access point would be designed and constructed in accordance with all applicable driveway requirements as required by the Sacramento County Department of Transportation (SacDOT) to ensure proper ingress/egress to minimize roadway hazards. The project also proposes an undercrossing under White Rock Road to connect the proposed conveyor system to the existing system south of White Rock Road. The undercrossing would have no impact on surrounding roadways and would also be reviewed for compliance with County site improvement and design standards. Impacts related to hazards due to a geometric design feature would be ***less than significant.***

RESULT IN INADEQUATE EMERGENCY ACCESS

The new undercrossing would be designed and constructed in accordance with all applicable driveway requirements as required by SacDOT to ensure proper ingress/egress. In addition, the proposed project would be required to comply with all applicable regulations and codes related to emergency access, including the 2022 California Fire Code, the County Fire Code, and the County General Plan. Compliance

with the 2022 California Fire Code, as adopted by reference in the County Fire Code, provides requirements for fire apparatus access roads, including minimum dimensions to allow for adequate access and turning radii for emergency vehicles accessing the project site during operations.

Furthermore, the proposed project would be subject to review by the County and responsible emergency service agencies, thus ensuring that the proposed project would be equipped to provide adequate access for emergency responders. Section 12-3.03 of the County Standard Construction Specifications requires project contractors to provide for the uninterrupted passage of emergency vehicles through or around a work area at all times (Sacramento County, 2024). Therefore, adherence to County policies and standards would ensure that adequate emergency access is provided.

For these reasons, implementation of the proposed project would not result in inadequate emergency access, and this impact would be ***less than significant.***

Utilities and Service Systems

Require or Result in the Relocation or Construction of New or Expanded Water, Wastewater Treatment or Storm Water Drainage, Electric Power, Natural Gas, or Telecommunication Facilities, the Construction or Relocation of Which Could Cause Significant Environmental Effects

The project will not require the provision of natural gas, wastewater treatment, or telecommunication facilities. Refer to the Hydrology and Drainage chapter for a discussion related to storm water drainage. No new water supply facilities would be required to serve the project.

Electric service is available at the site and the electricity required to power a conveyor system would not result in an extraordinary demand such that it would create an adverse physical impact to the provision of electrical services. Existing electrical lines and power poles are present on the Aerojet site. Mining activities may require the relocation of some power poles and/or electrical lines. In the event that relocation is necessary, the project proponent would work in coordination with Aerojet and any appropriate service providers to ensure that there are no adverse impacts to the existing electrical facilities onsite.

The Aerojet property contains a number of potable and industrial water facilities, including pipelines and wells. Mining activities would not include subsurface excavation, so interference with pipelines is not expected. Numerous monitoring and extraction wells are located onsite related to the ongoing groundwater remediation from historical operations at Aerojet. Mining activities may intersect with existing monitoring wells. In coordination with Aerojet, the project proponent may either avoid, or cut and lower monitoring well casings to facilitate mining activities. If cut, the monitoring well casings would be recapped at an appropriate elevation. Any recapped wells would be surveyed

in coordination with Aerojet's remediation team to establish a new reference for future measurement of water levels. If requested by Aerojet, then cutting and recapping activities would be scheduled around Aerojet's semi-annual water-level surveys (understood to be in April and October). The project proponent will avoid all extraction wells. In addition, the project proponent will ensure access roads to existing remediation wells are always provided for Aerojet use and access. Impacts associated with construction or relocation of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities would be ***less than significant.***

Have Sufficient Water Supplies Available to Serve the Project and Reasonably Foreseeable Future Development During Normal, Dry, and Multiple Dry Years

The proposed project would not require expansion of existing water supply facilities. Annual water use for dust control will be approximately 37.2 acre-feet/year. No new wells will be installed. All water needed for mining and processing will be obtained from existing water purveyors, such as the city of Folsom, Sacramento County Water agency (Zone 41), or Golden States Water Company. Alternatively, groundwater may be used for dust suppression. Granite currently has a permitted mining site south of White Rock Road, the Rio Del Oro (RDO) mine, which uses water from a groundwater extraction and treatment plant to supply water for dust suppression. The Teichert Grantline plant uses treated groundwater supplied by Aerojet as part of its groundwater extraction and treatment program and could also be a potential source of operational water for the project. Given the relatively small amount of water used on an annual basis and multiple options for supply, impacts related to water supply would be ***less than significant.***

Result in a Determination by the Wastewater Treatment Provider, Which Serves or May Serve the Project that it has Adequate Capacity to Serve the Project's Projected Demand in Addition to the Provider's Existing Commitments

The proposed project is a surface mining facility. The project will not construct any permanent structures that require disposal through the wastewater system. Instead, wastewater will be handled by the use of temporary mobile restroom facilities, which will be regularly serviced by qualified professionals. Therefore, the project will have **no impact** on wastewater services.

Generate Solid Waste in Excess of State or Local Standards, or in Excess of the Capacity of Local Infrastructure, or Otherwise Impair the Attainment of Solid Waste Reduction Goals

The project site is served by the Kiefer Landfill and will not generate a significant amount of solid waste. The Kiefer Landfill has capacity to accommodate solid waste until the year 2064. Therefore, impacts related to solid waste are ***less than significant.***

Comply with Federal, State, and Local Management and Reduction Statutes and Regulations Related to Solid Waste

The California Green Building Standards Code (CALGreen) (Title 24, Part 11 of the California Code of Regulations) requires all construction contractors to reduce construction waste and demolition debris by 65 percent. Code requirements include preparing a construction waste management plan that identifies the materials to be diverted from disposal by efficient usage, recycling, reuse on the project, or salvage for future use or sale; determining whether materials would be sorted on-site or mixed; and identifying diversion facilities where the materials collected would be taken. The code also specifies that the amount of materials diverted should be calculated by weight or volume, but not by both. In addition, CALGreen requires that 100 percent of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing be reused or recycled.

In addition, Sacramento County requires construction contractors to comply with its Construction and Demolition Debris Program (Article 6, Chapter 6.20 of the Sacramento County Code). Under this program, as part of a building permit application, project applicants must complete a waste management plan that identifies the types of waste materials; the manner in which debris would be managed on-site; the volume of construction/demolition debris that would be recycled, sent to a landfill, or reused; how the materials would be transported (i.e., franchised hauler, independent recycler, or self-hauling); and the County-certified receiving and sorting facility that would be used.

During implementation of the project, minimal amounts of solid waste would be generated, and this solid waste would be collected and transported to a licensed off-site landfill or recycling facility for disposal.

The proposed project would be required to comply with all applicable federal, State, and local solid waste statues and regulations, including compliance with the CALGreen Code and the County's Construction and Demolition Debris program. The Kiefer Landfill has sufficient landfill capacity available to accommodate the solid-waste disposal of the proposed project. Therefore, impacts related to compliance with regulations related to solid waste would be ***less than significant*.**

Wildfire

While all of California is subject to some degree of wildfire hazard, there are specific features that make certain areas more hazardous. The California Department of Forestry and Fire Protection (CAL FIRE) is required by law to map and identify Fire Hazard Severity Zones within the State of California, based on fuels, terrain, weather, and other relevant factors (Public Resources Code [PRC] 4201-4204 and Government Code 51175-89). Fire prevention areas considered to be under state jurisdiction are

designated as State Responsibility Area lands or SRAs[1]. CAL FIRE updates Fire Hazard Severity Zone maps for SRAs every five years and delineates three wildfire hazard ranges: very high, high and moderate. CAL FIRE is responsible for vegetation fires within SRA lands. In general, SRA lands contain trees producing, or capable of producing, forest products; timber, brush, undergrowth, and grass, whether of commercial value or not, that provide watershed protection for irrigation or for domestic or industrial use; or lands in areas that are principally used for, or are useful for, range or forage purposes.

The project site is not located in SRA lands but is within a local responsibility area (LRA), overseen by the Sacramento Metropolitan Fire District (Metro Fire). Although the project may require temporary utilities, such as use of generators, and will include installation of a conveyor to transport mined material to the existing processing plant located off-site, all components of the project are outside of the SRA and will not exacerbate fire risks. Furthermore, there are no increased risks to people or structures associated with post-fire slope instabilities that could lead to flooding or landslides. Impacts related to wildfire would be ***less than significant.***

GROWTH-INDUCING IMPACTS

GROWTH-INDUCING IMPACTS

An EIR must discuss the ways in which a proposed project could foster economic or population growth or the construction of additional housing in the vicinity of the project, and how that growth will, in turn, affect the surrounding environment (see CEQA Guidelines Section 15126.2[d]). Growth can be induced in a variety of ways, including through the elimination of obstacles to growth, or through the stimulation of economic activity within the region. The discussion of the removal of obstacles to growth relates directly to the removal of infrastructure limitations or regulatory constraints that could result in growth unforeseen at the time of project approval.

The proposed project consists of the mining of aggregate for use in construction. Although the project does not directly include new housing or significant new employment, or new infrastructure that could foster economic or population growth, the project will be used to facilitate the construction of new or planned growth in the County. In other words, while the project will provide the means for construction related to growth, the growth is anticipated or has been accounted for (such as through adopted zoning or general plan designations), and therefore does not in of itself result in direct or indirect growth-inducing impacts. In addition, the demand for aggregate construction materials is largely inelastic, meaning that if the region's demands for construction

[1] California Public Resources Code (PRC) Sections 4125–4127 define a State Responsibility Area as lands in which the financial responsibility for preventing and suppressing wildland fire resides with the State of California.

materials are not met by the project, then they would likely be met by others sources of construction materials.

Irreversible Impacts

Section 15126.2(d) of the CEQA Guidelines defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continuing phases of the project. The CEQA Guidelines discuss three categories of significant irreversible changes that should be considered, which are listed below:

- Changes in Land Use Which Commit Future Generations
- Irreversible Damage from Environmental Accidents
- Consumption of non-renewable resources

Implementation of the project would result in removal of aggregate associated with mine tailings that are remnant of historical mining uses. Upon reclamation, the site would be restored to a developable state, consistent with existing policies and regulations. The project would not result in a commitment of future generations to any particular land use on the site.

Energy would be consumed during both the construction and operational phases of the project. Implementation of the project would require the use of nonrenewable resources, including fossil fuels for use by mining equipment, electricity to power the conveyor system and security lights. The use of energy during all phases of the project would be irreversible but would not be significant in relation to overall sources and supplies, as described in the Energy section above.

Potential impacts related to hazardous materials and required mitigation measures are discussed extensively in Chapter 14. Accidents, such as the release of hazardous materials, could trigger irreversible environmental damage, and appropriate mitigation requirements are included related to the Aerojet Superfund site. Project construction and operation would result in minimal transport of hazardous materials, and transport and handling would be in accordance with state and local regulations. As such, the project would not result in irreversible damage from environmental accidents.

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