Appendix E

Revised Expanded Regulatory and Environmental Setting

Expanded Regulatory and Environmental Setting

INTRODUCTION

This section summarizes the framework of laws, regulations, and agreements pertaining to the site and actions outlined throughout this Environmental Assessment (EA) as well as supplemental information regarding the environmental setting. The relevant legislation is organized by resource category, and while most regulations discussed within the document are described here, this list is not comprehensive and is limited to the primary regulations relevant to the analysis within the EA.

LAND RESOURCES – SECTION 3.2 OF THE EA

Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) prohibits sediment and erosion discharge into navigable waters of the United States and establishes water quality goals. The State Water Resources Control Board (SWRCB) requires a Construction General Permit if a project will disturb one or more acres of soil. A site-specific Stormwater Pollution Prevention Plan (SWPPP) is required under this permit. For more information on the CWA and the SWRCB, see **Water Resources – Section 3.3 of the EA** below.

State and Local

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act; formerly the Alquist-Priolo Special Studies Zone Act), signed into law December 1972 after the 1971 San Fernando earthquake, requires the delineation of zones along active and potentially active faults in California. The California Geological Survey defines an "active" fault as one that exhibits evidence of activity during the last 11,000 years. Faults that exhibit evidence of Quaternary activity (within the last 1.6 million years) are considered to be "potentially active." The purpose of the Alquist-Priolo Act is to regulate development on or near fault traces to reduce the hazard of fault rupture and to prohibit the location of most off-Reservation structures for human occupancy across these traces.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was enacted in 1990 to protect the public from the effects of strong ground shaking, liquefaction, landslides, ground failure, or other hazards caused by earthquakes. This act requires a state geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within the portions of those zones where they have jurisdiction. Before a development permit is granted by a city, county or other local permitting agency for a site

within a seismic hazard zone, a geotechnical investigation must be conducted, and appropriate mitigation measures must be incorporated into the project's design.

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act of 1975 requires all jurisdictions to incorporate mapped mineral resources designations approved by the California Mining and Geology Board within their general plans. The Surface Mining and Reclamation Act was enacted to limit new development in areas with significant mineral deposits. The California Department of Conservation's Office of Mine Reclamation and the California Mining and Geology Board are jointly charged with ensuring proper administration of the act's requirements. The California Mining and Geology Board circulates regulations to clarify and interpret the act's provisions and also serves as a policy and appeals board.

City of Vallejo General Plan 2040

The Propel Vallejo General Plan 2040 is a comprehensive long-term planning document that outlines the vision, goals, policies, and strategies for the future development and growth of Vallejo, California, up to the year 2040. It serves as a blueprint for guiding land use, transportation, housing, economic development, environmental conservation, and other aspects of community development within the city.

Nature and Built Environment Element

The General Plan is the City's primary land use regulatory tool and outlines the steps needed to achieve the community's vision for the future. The Nature and Built Environment Element includes goals, policies, and actions relating to five key goals: Beautiful City, A Place Where People Want to Be, Pride in Identity, Iconic Waterfront, and Hazard Protection.

Goal NBE-5: Hazard Protection: Protect life and property from natural and human-made hazards.

> **Policy NBE-5.4**: Project Location and Design. Prohibit development in any area where it is determined that the potential risk from natural hazards cannot be mitigated to acceptable levels.
>
> > **Action NBE-5.4A:** Continue to require geotechnical studies for land use proposals to determine engineering measures that may be necessary to adequately mitigate any seismic, flooding, sea level rise, landslide, erosion, or related risk.
> >
> > **Action NBE-5.4B:** Continue to require drainage and erosion control measures for landslide-prone or geologically hazardous hillside areas to minimize risks to downhill areas.
> >
> > **Action NBE-5.4C:** Continue to use the development review process to ensure that development is planned and constructed to resist the encroachment of uncontrolled fire.
> >
> > **Action NBE-5.4D:** Locate public facilities that are critical to health and safety (such as police and fire stations, and water and sewer facilities) so as to minimize potential impacts from hazards.

Environmental Setting

Geological Setting

The Project Site is located within the central portion of the Coast Range Geomorphic Province of California. The site is underlain by Jurassic and Cretaceous age Great Valley sedimentary rocks. The northeast and eastern edge

of the site are overridden by thrust-blocks of Jurassic Coast Range Ophiolite sequence silica-carbonate rock (Graymer et al., 1999). As described in **Appendix D**, expansive landslides occur in the area through both Great Valley Sequence rock and silica-carbonate rock found on the southern slope of Sulphur Springs Mountain (Graymer et al., 1999).

Topography

The existing topography of the Project Site consists of hilly and hummocky terrain. The site has a steep hillside at the base of Sulphur Springs Mountain which slopes towards the southwest. On the western and northern portion of the property the ground slopes uphill at higher slope inclinations with elevations ranging from 130 feet (southeast corner) to 800 feet (northeast corner) above mean sea level (amsl) and ground sloping towards Columbus Parkway. The average grade across the Project Site is 13 percent from north to south. While the Project Site is undeveloped, it has been subject to grading activities associated with the construction of the adjacent interstate and interchange. A fill slope was constructed along the western property boundary in the 1950s, which was later expanded towards the east in the 1960s, while the knoll in the southwestern portion of the site was cut down by approximately 60 feet of material during highway upgrades in the 1970s (**Appendix D**).

Soil Types and Characteristics

The Project Site contains four soil types: Clear Lake clay, 0 to 2 percent slopes; Clear Lake clay, drained, 2 to 5 percent slopes; Dibble-Los Osos clay loams, eroded, 30 to 50 percent slopes; and Toomes stony loam, eroded, 30 to 75 percent slopes.

The hydrologic soil group is a classification based on the runoff potential of the soils when thoroughly wet, which is defined by the Natural Resource Conservation Service (NRCS) as being under the conditions of maximum yearly wetness (NRCS, 2007). Soils are grouped into four classes that grade from A to D, with A being coarse-grained soils with high infiltration and low runoff potential and D being mostly fine-grained clays with extremely slow infiltration and high runoff potential. The soils on the Project Site have hydrologic ratings of C/D and D, indicating the soils have slow to very slow infiltration rates and moderately fine or fine, claypan, and clayey textures (NRCS, 2024).

Saturated hydraulic conductivity [Ksat] is a quantitative measurement for the movement of water through saturated soil or the ease with which pores in a saturated soil transmit water. Ksat is a factor in determining the hydrologic soil group and is often used in the design of water and wastewater disposal features such as percolation ponds and septic systems. Ksat measures transport only in a vertical direction under completely saturated conditions.

Soil erosion is the wearing and removal of soil materials from the ground surface and the transportation of these soil materials resulting in deposition elsewhere. Mechanisms of soil erosion include stormwater runoff and wind as well as human activities. Factors that influence erosion include physical properties of the soil, topography, annual rainfall, and peak intensity. Soils on the Project Site transmit water at varying rates, including moderately low to high rates. This indicates that the majority of the Project Site has a high to very high surface runoff potential, and a small portion of the Project Site water infiltrates at a moderately low rate instead of running off. Subsurface testing at the Project Site illustrated that the Project Site has groundwater depths that fluctuate seasonally between 10 to 14 feet (**Appendix D**).

Corrosivity pertains to a soil-induced electrochemical or chemical reaction that corrodes concrete or steel. The soils on the Project Site have low to moderate risks of corrosion to concrete and low to high risks of corrosion to steel (NRCS, 2024).

Expansive soils may increase in volume when water is absorbed and may shrink when dried, as expansive soils are largely comprised of clays. The property of expansion is measured using linear extensibility. Expansive soils are of concern because they can cause building foundations to rise during the rainy season and fall during the dry season, causing structural distortion. The soils on the Project Site have mapped low-to-very high linear extensibility ratings and therefore are considered to be expansive soils. Field exploration was conducted, which included infiltration testing, borings, test pits, and laboratory analysis of soil samples (**Appendix D**). Three borings were drilled ranging in depths from 43 to 75.5 feet below existing grade. The boring and core logs depicted subsurface conditions at the boring locations during exploration. Twenty-four test pits were dug, with a maximum depth of eight feet, and test pit logs depict subsurface conditions during exploration. Six infiltration tests were performed with field-measured infiltration rates, all of which confirmed the high to critically high shrink/swell potential for soils on the Project Site but low risk of liquefaction (**Appendix D**).

Liquefaction

Liquefaction occurs when loose, saturated, uniformly graded, fine-grained sand, and relatively cohesionless soil deposits temporarily lose strength from seismic shaking. The primary factors controlling the onset of liquefaction include intensity and duration of strong ground motion, characteristics of subsurface soil, on-site stress conditions, and the depth to groundwater. During the field investigations, only clay with variable amounts of sand and gravel was encountered, and the deposits appeared to be discontinuous and comprised of angular rock fragments mixed with sand and clayey fines. Groundwater was not encountered within these coarse-grained soil layers, so the potential for liquefaction at the site is low during seismic shaking (**Appendix D**).

WATER RESOURCES – SECTION 3.3 OF THE EA

Regulatory Setting

Federal

Executive Order 11988

Executive Order (EO) 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. Specifically, EO 11988 states that agencies shall first determine whether the proposed action will occur in a floodplain. EO 11988 defines a floodplain as an area that has a one percent or greater chance of flooding in any given year. Second, if an agency proposes to allow an action to be located in a floodplain, the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains. If the only practicable alternative action requires siting in a floodplain, the agency shall minimize potential harm to or within the floodplain.

Clean Water Act

CWA (33 U.S. Code [USC] § 1251-1376), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The U.S. Environmental Protection Agency (USEPA) is delegated as the administrative agency under the CWA. Relevant sections of the CWA are as follows.

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines. Section 303(d) requires states to identify impaired off-Reservation water bodies, rank these impaired bodies based on severity of contamination and uses for the waters, and develop water quality management strategies, usually in the form of total maximum daily loads for the contaminant(s) of concern.
- Section 401 (Water Quality Certification) requires an applicant for any federal permit that proposes an activity that may result in a discharge to Waters of the U.S., to obtain certification from the USEPA for on-trust land activities, or the state for off-Reservation activities, that the discharge will comply with other provisions of the CWA.
- Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredged or fill material) into Waters of the U.S. Each NPDES permit contains limits on concentrations of pollutants discharged to surface waters to prevent degradation of water quality and protect beneficial uses.

The Federal Antidegradation Policy was adopted as part of the 1972 amendments to the CWA. Federal policy (Code of Federal Regulations [CFR], Title 40, Part 131.12) specifies that each state must develop, adopt, and retain an anti-degradation policy to protect the minimum level of off-Reservation surface water quality necessary to support existing uses. Each state must also develop procedures to implement the anti-degradation policy through water quality management processes. Each state anti-degradation policy must include implementation methods consistent with the provisions outlined in 40 CFR § 131.12. On trust land, these issues are addressed by the USEPA.

General NPDES Permit for Construction

In 1990, an amendment to the CWA directed the NPDES permitting program to address non-point source pollution from construction activities. Construction activities include clearing, grading, excavation, stockpiling, and reconstructing existing facilities involving removal and replacement of existing foundations or other hardscapes. Construction projects disturbing one or more acres of soil must be covered under the NPDES Construction General Permit process. For tribal projects on land held in trust by the federal government, the Tribe proposing the project must apply for coverage under the USEPA's NPDES Construction General Permit. Project proponents are required to submit to the USEPA a complete Notice of Intent (NOI) to comply with the permit. A complete NOI package consists of an NOI form, site map, and fee. The USEPA's NPDES Construction General Permit also requires the development and implementation of a SWPPP. The SWPPP contains a site map showing the construction site perimeter, existing and proposed buildings, lots and roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the site. The SWPPP must list Best Management Practices (BMP) that will be implemented during construction and operation to address stormwater runoff rates and quality. SWPPP BMPs include the following categories:

- Site planning considerations, such as preservation of existing vegetation;
- Vegetation stabilization through methods such as seeding and planting;
- Physical stabilization through use of dust control and stabilization measures;
- Diversion of runoff by utilizing earth dikes and temporary drains and swales;
- Velocity reduction through measures such as slope roughening/terracing; and
- Sediment trapping/filtering through use of silt fences, straw bales and sand bag filters, and sediment traps and basins.

Safe Drinking Water Act

Under the mandate of the Safe Drinking Water Act, the USEPA sets legally enforceable National Primary Drinking Water Regulations (primary standards) that apply to public water systems. These standards are established to protect human health by limiting the levels of contaminants in drinking water. The USEPA also defines National Secondary Drinking Water Regulations (secondary standards) for contaminants that cause cosmetic and aesthetic effects, but not for health effects. The USEPA recommends that these secondary standards be met but does not require systems to comply with them.

The USEPA does not oversee the construction and permitting of groundwater wells, but requires that public health standards, such as an effectively installed sanitary seal, are in place, and recommends that water systems be installed to meet California Department of Public Health Standards. The USEPA will also primarily establish monitoring and operational requirements, which will typically be specific to the project area. Both primary and secondary drinking water standards are expressed as either Maximum Contaminant Levels, which define the highest level of a contaminant allowed in drinking water, or Maximum Contaminant Level Goals, which define the level of a contaminant below which there is no known or expected risk to health. Monitoring requirements typically include total coliform, nitrate, inorganic chemicals, volatile organic chemicals, non-volatile synthetic organic chemicals, secondary drinking water standard constituents, and general chemistry (including alkalinity, hardness, and minerals). The frequency of sampling varies and may be reduced over time.

Federal Emergency Management Agency

The Disaster Relief Act of 1974 as amended by the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 created the Federal Emergency Management Agency (FEMA), which is responsible for determining flood elevations and floodplain boundaries based on U.S. Army Corps of Engineers (USACE) studies. FEMA is also responsible for distributing Flood Insurance Rate Maps, which are used in the National Flood Insurance Program. These maps identify the locations of special flood hazard areas, including 100-year floodplains.

State and Local

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act provides the basis for surface water and groundwater quality regulation within California. The act established the authority of the SWRCB and the nine Regional Water Quality Control Boards (RWQCB). The act requires the State, through the SWRCB and the RWQCBs, to designate beneficial uses of surface waters and groundwater and specify water quality objectives designed to protect those uses. These water quality objectives are presented in the Regional Water Quality Control Plans. The surface water quality standards for State of California include both narrative and numerical water quality objectives to keep California's waters swimmable, fishable, drinkable, and suitable for use by industry, agriculture, and the citizens of the state.

Sustainable Groundwater Management Act

The intent of the California Sustainable Groundwater Management Act (SGMA; Water Code § 10720 et seq.) is to "enhance local management of groundwater consistent with rights to use or store groundwater… [and] to preserve the security of water rights in the state to the greatest extent possible consistent with the sustainable management of groundwater." The SGMA states that "any local agency or combination of local agencies overlying a groundwater basin may elect to be a groundwater sustainability agency for that basin" (Water Code § 10723). A groundwater sustainability agency will be formed within each groundwater basin to prepare and implement a plan for long-term groundwater sustainability.

Title 22 California Code of Regulations

Title 22 CCR Division 4, Chapter 3 regulates the sources, uses, and quality standards of recycled water in the State. Article 3, Section 60304(a) requires that any recycled water used for the irrigation of food crops, parks and playgrounds, and residential landscaping shall be a disinfected tertiary recycled water. Article 1, Section 60301.230 defines disinfected tertiary recycled water as a wastewater that has been filtered and disinfected, and which meets the following criteria:

A. The filtered wastewater has been disinfected by either: (1) A chlorine disinfection process following filtration that provides a CT (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; OR (2) A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.
B. The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed a most probable number (MPN) of 2.2 per 100 milliliter (mL) using the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 23 per 100 mL in more than one sample in a 30-day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 mL.

City of Vallejo General Plan

The General Plan recognizes the value of water resources available to the City, including the aesthetic value, biological value, economical value, importance of municipal water services, and use of water as a means of transportation. As a guiding principle, the General Plan considers the waterfront to be a centerpiece of the community, including as natural/open space. Other Guiding Principles include environmental stewardship, including management of watersheds and wetlands and water conservation practices.

Goal NBE-5: Hazard Protection: Protect life and property from natural and human-made hazards.

> **Policy NBE-5.7** Design for Stormwater Control. Encourage new development and redevelopment to minimize the area of new roofs and paving.
>
> > **Action NBE-5.7A:** Provide informational materials that promote the use of permeable materials for driveways, streets, parking lots, sidewalks, and plazas.
> >
> > **Action NBE-5.7B:** Continue to manage and maintain City-owned storm drainage infrastructure to avoid flooding and reduce the negative effects of stormwater runoff.

City of Vallejo Municipal Code

The City's Municipal Code outlines regulations related to water use and protection. This includes regulations regarding connections to municipal water services or installation of groundwater wells, water efficient landscaping requirements, and water conservation and waste prevention requirements. The Municipal Code also outlines surface water protections, including prohibitions against illegal dumping, stormwater management actions, and zoning designations of open space areas.

Environmental Setting

Surface Water Quality

The Project Site is located in the American Canyon Creek-Frontal San Pablo Bay Estuaries watershed (HUC 180500020401) (USEPA, 2024d). The USEPA has evaluated the quality of three of these waterbodies in 2022: Carquinez Strait, Lake Chabot, and the Napa River (Mare Island Strait). The Carquinez Strait was found to be impaired due to dioxins, mercury, metals, nuisance plants or animals, polychlorinated biphenyls (PCBs), and pesticides. Lake Chabot was found to be impaired due to mercury. The Mare Island Strait portion of the Napa River is considered impaired due to mercury, PCBs, and pesticides.

Municipal Water Supply

The City of Vallejo currently utilizes surface water rights to withdraw water from three separate watersheds: the Sacramento River, Putah Creek, and Wild Horse Creek watersheds (City of Vallejo, 2021). The City also anticipates future water supplies from the Upper Suisun Creek watershed. Water sourced from the Sacramento River watershed comes from appropriative water rights license 7848, which allows for withdraw of 22,819 acre-feet (af) annually from the Sacramento River, and from a contract with the Solano County Water Agency, which provides up to 14,600 af annually. Water from the Putah Creek watershed is sourced from Lake Berryessa; available water varies annually, with a contracted allocation generally between 13,000 and 15,000 af annually. Water pulled from the Wild Horse Creek watershed is sourced from pre-1914 appropriative water rights for withdrawals from Lake Madigan (1,744 af annually), Lake Frey (1,075 af annually), and the Green Valley Diversion Dam (various annual limits, maximum 1,050 gpm rate of withdrawal). The City also holds water rights license 5728 in the Suisun Creek watershed to withdraw 5,400 af annually and anticipates utilizing this license to supply municipal water in the future.

Groundwater

The City does not use groundwater resources for municipal services. Domestic wells occurring in the vicinity of the Project Site have varying depths, with some as shallow as 100 feet and others as deep as 600 feet (CDWR, 2024). There are currently no groundwater wells on the Project Site. The geotechnical report prepared for the Project Site evaluated groundwater depth. A vertical drainage gallery was partially constructed near the bike path to the south of the Project Site. This feature was not encountered during geotechnical investigations; however, it is possible that an elevated groundwater table may be present near the bike path. Three borings were taken to determine relative groundwater depth. Two of the borings identified groundwater depths at 11 to 14 feet below ground surface. The third boring did not encounter groundwater to a final depth of 60 feet (**Appendix D**).

While not within the bounds of a named and studied groundwater basin or aquifer, the Project Site is part of the larger North San Francisco Bay Shallow Aquifer Study Unit. Within the North San Francisco Bay Shallow Aquifer Study Unit, private well depths range from 7 to 755 feet below ground surface, indicating that a mixture of shallow and deep localized aquifers make up a large portion of the region, including the Project Site (USGS, 2017). The Project Site is near the border of the highlands sub-area and the valley and plains sub-area within this Study Unit. The lower-lying plains, including the area southwest of the Project Site, are more likely to have unconfined aquifers with fewer semi-confined pockets of groundwater (USGS, 2011). Highlands areas, such as lands to the north and east of the Project Site have more limited groundwater movement and confinement of layers (USGW, 2017). Groundwater age was found to scale with depth, with younger groundwater in more

shallow aquifers and older groundwater at lower depths. Similarly, groundwater quality scaled with depth, with deeper, more filtered water generally of a better quality (USGS, 2017).

Within the North San Francisco Bay Shallow Aquifer Study Unit, aquifer recharge is primarily via stream-channel infiltration from the major rivers and their tributaries and by infiltration of precipitation (USGS, 2018). This was based upon data gathered for wells at depths up to approximately 755 feet. There are no reported dry wells in the vicinity of the Project Site; the nearest reported dry well is located approximately 10 miles north and was reported dry in 2021 (CDWR, 2024a). There are no off-site wells within a half mile that could be impacted by future wells on the Project Site, should Water Supply Option 2 be selected and multiple groundwater wells be drilled. CDWR evaluated the risk of wells going dry in the vicinity of the Project Site and found the area to be in the lowest risk categories (CDWR, 2024b). Subsidence data also shows no appreciable change in vertical displacement adjacent to and partially overlapping the Project Site, with no appreciable vertical displacement in the vicinity (CDWR, 2024c and d). Where subsidence measurements overlap the Project Site, changes from 2015-2023 totaled a change of less than 0.01 feet of vertical displacement (CDWR, 2024d).

AIR QUALITY – SECTION 3.4 OF THE EA

Regulatory Setting

Federal

Clean Air Act of 1970

The Clean Air Act (CAA; 42 USC Chapter 85) is the federal legislation for the protection of air quality. The CAA gives the USEPA authority to regulate air quality by promulgating standards and levels for air quality and enforcing those standards and levels on federal, state, and tribal land. The CAA requires the USEPA to regulate hazardous air pollutants, which are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects.

Certain air pollutants, either directly or in reaction with other pollutants, have been recognized to cause notable health problems and consequential damage to the environment due to their presence in elevated concentrations in the atmosphere. Such pollutants have been identified and regulated as part of the overall endeavor to prevent further deterioration and facilitate improvement in air quality. The Federal CAA of 1970, as amended, establishes air quality standards for several critical air pollutants (CAPs): ozone (O_3), carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb). These pollutants are termed “criteria” pollutants because the USEPA has established specific concentration threshold criteria based upon specific medical evidence of health effects or visibility reduction, soiling, nuisance, and other forms of damage. These National Ambient Air Quality Standards (NAAQS) are divided into primary standards and secondary standards. Primary standards are designed to protect the public health and secondary standards are intended to protect the public welfare from effects such as visibility reduction, soiling, nuisance, and other forms of damage. NAAQS and California Ambient air quality standards (CAAQS) are presented in **Table 1.**

Areas are designated attainment, nonattainment, or maintenance by the USEPA depending on whether the area is below or exceed the established NAAQS. Nonattainment areas must take steps towards attainment within a specific period of time. Once an area reaches attainment for particular criteria pollutant, then the area is re-designated attainment or maintenance. The CAA places most of the responsibility on states to achieve compliance with the NAAQS. States, municipal statistical areas, and counties that contain areas of

nonattainment are required to develop a State Implementation Plan (SIP), which outlines policies and procedures designed to bring the state into compliance with the NAAQS.

Table 1: Ambient Air Quality Standards

Pollutant	Averaging Time	Standard (parts per million)		Standard (microgram per cubic meter)		Violation Criteria	
		CAAQS	NAAQS	CAAQS	NAAQS	CAAQS	NAAQS
O_3	1 hour	0.09	N/A	180	N/A	If exceeded	N/A
	8 hours	0.070	0.070	137	137	N/A	If exceeded on more than 3 days in 3 years
CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
	1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
NO_2	Annual arithmetic mean	0.030	0.053	57	100	N/A	If exceeded
	1 hour	0.18	0.100	470	188	If exceeded	N/A
SO_2	Annual arithmetic mean	N/A	0.030	N/A	N/A	N/A	If exceeded
	24 hours	0.04	0.14	105	N/A	If exceeded	If exceeded on more than 1 day per year
	1 hour (primary)	0.25	0.075	655	196	N/A	N/A
	3 hours (secondary)	N/A	0.5	N/A	N/A		If exceeded on more than 1 day per year
PM_{10}	Annual arithmetic mean	N/A	N/A	20	N/A	If exceeded	If exceeded
	24 hours	N/A	N/A	50	150	If exceeded	If exceeded on more than 1 day per year

Pollutant	Averaging Time	Standard (parts per million)		Standard (microgram per cubic meter)		Violation Criteria	
		CAAQS	NAAQS	CAAQS	NAAQS	CAAQS	NAAQS
$PM_{2.5}$	Annual arithmetic mean (primary)	N/A	N/A	12	12	If exceeded	If exceeded
	Annual arithmetic mean (secondary)	N/A	N/A	N/A	15	If exceeded	If exceeded
	24 hours	N/A	N/A	N/A	35	If exceeded	If exceeded on more than 1 day per year
Lead	30 day Avg.	N/A	N/A	1.5	N/A	If equaled or exceeded	N/A
	Rolling 3-month Avg.	N/A	N/A	N/A	0.15	N/A	If exceeded
Visibility Reducing Particles	8 hour	Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more.	No Federal Standard	N/A	No Federal Standard	N/A	N/A
Sulfates	24 hour		No Federal Standard	25	No Federal Standard	If equaled or exceeded	N/A
H_2S	1 hour	0.03	No Federal Standard	42	No Federal Standard	If equaled or exceeded	N/A
Vinyl Chloride	24 hour	0.01	No Federal Standard	26	No Federal Standard	If equaled or exceeded	N/A

Source: California Air Resources Board, 2016

Ozone

Photochemical reactions involving reactive organic gases (ROG)/volatile organic compounds (VOC) and nitrogen oxides (NO_X) resulting from the incomplete combustion of fossil fuels are the largest source of ground-level O_3. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, O_3 is primarily a summer air pollution problem. As a photochemical pollutant, O_3 is formed only during daylight hours under appropriate conditions. However, it is destroyed throughout the day and night. O_3 is considered a regional pollutant as the reactions forming it take place over time and are often most noticeable downwind from the sources of the emissions. The Bay Area Air Quality Management District is designated as nonattainment for O_3 by the USEPA (USEPA, 2024).

Particulate Matter 2.5

Particle pollution is a mixture of microscopic solids and liquid droplets suspended in air. This pollution, also known as $PM_{2.5}$, is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, soil or dust particles, and allergens (such as fragments of pollen or mold spores). The size of particles is directly linked to their potential for causing health problems. Particles smaller than 2.5 µm pose the greatest problems because they can be inhaled deep into the lungs. Exposure to such particles can affect respiratory system function. The Bay Area is designated as marginal nonattainment for $PM_{2.5}$ by the USEPA (USEPA, 2024).

Carbon Monoxide

CO is not readily dispersed throughout the atmosphere; therefore, it is considered a localized air quality issue as it is close to the emission source. CO emissions generally cause an acute (short-term) health threat. CO is a pollutant of concern at major signalized intersections (greater than 100,000 vehicles per day) that exhibit prolonged vehicle idling times. The Bay Area Air Quality Management District is designated as attainment (maintenance) for CO by the USEPA (USEPA, 2024). In July 2004, CARB adopted the 2004 CO Maintenance Plan. In 2023, CARB submitted to the USEPA a revision to the California State Implementation Plan for Carbon Monoxide, which included an updated Maintenance Plan for three federal planning areas, titled *2023 Revision to the California State Implementation Plan for Carbon Monoxide, Updated Maintenance Plan for Three Federal Planning Areas* (CARB, 2024). The CO Maintenance Plan outlines how the region will continue to comply with the NAAQS. The BAAQMD in April 2017 adopted the multi-pollutant air quality plan *Clean Air Plan: Spare the Air, Cool the Climate*. This plan addresses ground level-zone, ozone precursor pollutants, particulate matter, toxic air contaminants, and greenhouse gases (BAAQMD, 2017b).

Hazardous Air Pollutants

In addition to the above-listed CAPs, Hazardous Air Pollutants (HAP) are a group of chemical pollutants which can cause adverse effects to human health and/or the environment. Haps are also known as toxic air pollutants or air toxics. HAPs are a list of over 188 airborne chemicals developed by the USEPA. Sources of HAPs include industrial processes, such as petroleum refining and chrome plating operations; commercial operations, such as gasoline stations and dry cleaners; cigarette smoke; and motor vehicle exhaust. Cars and trucks release at least 40 different HAPs. The most important, in terms of health risk, are diesel particulate matter (DPM), benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Health effects of HAPs can include cancer, birth defects, and neurological damage.

HAPs are less pervasive in the urban atmosphere than CAPs but are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. The majority of the estimated health risk from HAPs can be attributed to relatively few compounds. The most important HAPs are found in DPM. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. Diesel exhaust contains a variety of harmful gases and over 40 other cancer-causing substances, and the visible emissions in diesel exhaust are PM that includes carbon particles or “soot.” Exposure to DPM is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems.

Federal General Conformity

Under the General Conformity Rule, updated in 2010, the lead agency with respect to a federal action is required to demonstrate that the proposed federal action conforms to the applicable SIP before the action is taken. There are two phases to a demonstration of general conformity.

- The Conformity Review process, which entails an initial review of the federal action to assess whether a full conformity determination is necessary
- The Conformity Determination process, which requires that a proposed federal action be demonstrated to conform to the applicable SIP

The Conformity Review requires the lead agency to compare estimated emissions to the applicable general conformity levels (40 CFR 93.153 [b][1] and [2]), which these can be seen in **Table 2** and **Table 3**. If the emission estimates from step one is below the applicable threshold(s), then a general conformity determination is not necessary and the full Conformity Determination is not required. If emission estimates are greater than the applicable threshold(s), the lead agency must conduct a Conformity Determination.

Federal Class I Areas

Title 1, Part C of the CAA was established in part to preserve, protect, and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores, and other areas of special national or regional natural, recreational, scenic, or historic value. The CAA designates all international parks, national wilderness areas, and memorial parks larger than 5,000 acres and national parks larger than 6,000 acres as "Class I areas." The CAA prevents significant deterioration of air quality in Class I areas under the Prevention of Significant Deterioration (PSD) Program. The PSD Program protects Class I areas by allowing only a small increment of air quality deterioration in these areas by requiring assessment of potential impacts on air quality related values of Class I areas.

Any major source of emissions within 100 kilometers (62.1 miles) from a federal Class I area is required to conduct a pre-construction review of air quality impacts on the area(s). A "major source" for the PSD Program is defined as a facility that will emit (from direct stationary sources) 250 tons per year (tpy) of regulated pollutant. For certain industries, these requirements apply to facilities that emit (through direct stationary sources) 100 tpy or more of a regulated pollutant. Mobile sources (e.g., vehicle emissions) are by definition not stationary sources and are therefore not subject to the PSD program.

Table 2: 40 CFR 93.153 [b][1] Emission Rates for Nonattainment Areas (NAAs)

Pollutant	Tons per Year
Ozone (VOC's or NOX):	
Serious NAA's	50
Severe NAA's	25
Extreme NAA's	10
Other ozone NAA's outside ozone transport region	100
Other ozone NAA's inside an ozone transport region:	
VOC	50
NOx	100
Carbon Monoxide: all maintenance areas	100
SO_2 or NO_2: All NAAs	100
PM_{10}:	
Moderate NAA's	100
Serious NAAs	70
PM2.5 (direct emissions, SO2, NOX, VOC, and Ammonia):	
Moderate NAA's	100
Serious NAAs	70
PD: all NAA's	25

Table 3: 40 CFR 93.153 [b][2] Emission Rates for Maintenance Areas

Pollutant	Tons per Year
Ozone (NOX), SO_2 or NO_2:	
All maintenance areas	100
Ozone (VOC's)	
Maintenance areas inside an ozone transport region	50
Maintenance areas outside an ozone transport region	100
Carbon monoxide: All maintenance areas	100
PM_{10}: All maintenance areas	100
$PM_{2.5}$ (direct emissions, SO_2, NOx, VOC, and Ammonia)	100
All maintenance areas	100
Pb: All maintenance areas	25

Tribal New Source Review

The Tribal Minor New Source Review (NSR) permitting program was established by the USEPA under the CAA. The minor NSR program applies to both new minor sources and minor modifications to both major and minor projects in attainment and nonattainment areas. NSR programs must comply with the standards and control strategies of the Tribal Implementation Plan (TIP) or SIP. If there is not an applicable SIP or TIP, the USEPA issues permits and implements the program. A General Permit under the minor NSR program would be required on tribal trust land if stationary source allowable emissions of regulated pollutants would exceed the thresholds presented in 40 CFR 49.153, Table 1 (presented in **Table 4**). This General Permit serves as a preconstruction permit containing limitations and other restrictions specifying the construction, modification, and operation of a minor source. The applicability of Tribal NSR is made on a source's potential to emit (PTE). For emergency generators, the USEPA has determined that 500 hours per year should be assumed as a reasonable and realistic "worst-case" estimate on a PTE basis (USEPA, 1995).

Table 4: Tribal Minor New Source Review Thresholds

Pollutant	Emissions Thresholds for Nonattainment Areas (tpy)	Emissions Thresholds for Attainment Areas (tpy)
NOx	5	10
ROG	2	5
PM	5	10
PM_{10}	1	5
$PM_{2.5}$	0.6	3
CO	5	10
SO_2	5	10
Pb	0.1	0.1

Source: 40 CFR 49.153.

Climate Change

On February 19, 2021, Secretary of the Interior Deb Haaland issued Secretarial Order (SO) 3399 to prioritize action on climate change throughout the Department and to restore transparency and integrity in the Department's decision-making processes. SO 3399 specifies that when considering the impact of GHG emissions from a proposed action, Bureaus/Offices should use appropriate tools, methodologies, and resources available to quantify GHG emissions and compare GHG quantities across alternatives. SO 3399 acknowledges that identifying the interactions between climate change and the environmental impacts of a proposed action in NEPA documents can help decision makers identify opportunities to reduce GHG emissions, improve environmental outcomes, and contribute to protecting communities from the climate crisis.

On January 9, 2023, the Council on Environmental Quality issued National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change (88 Fed. Reg. 1196). This interim guidance directs agencies to consider the potential effects of a proposed action on climate change and the effects of climate change on a proposed action and its environmental impacts. CEQ recommends that agencies quantify a proposed action's projected GHG emissions for the expected lifetime of the action and provide additional context for GHG emissions, including the use of the best available social cost of GHG (SC–GHG) estimates, to translate climate impacts into the more accessible metric of dollars. This guidance does not propose a specific, quantitative threshold of significance; however, it states that agencies should consider the potential for mitigation measures to reduce or mitigate GHG emissions and climate change effects when those measures are

reasonable and consistent with achieving the purpose and need for the proposed action. CEQ recommends that agencies explain how the proposed action and alternatives would help meet or detract from achieving relevant climate action goals and commitments, including federal goals, international agreements, state or regional goals, Tribal goals, agency-specific goals, or others as appropriate.

Social Cost of Carbon

The Interagency Working Group on Social Cost of Greenhouse Gases (IWG) has developed estimates of the social cost of GHGs (SC-GHG) (IWG, 2021). The SC-GHG is the monetary value of the net harm to society associated with adding an amount of that GHG to the atmosphere in a given year. In principle, it includes the value of all climate change impacts, including (but not limited to) changes in net agricultural productivity, human health effects, property damage from increased flood risk natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services. Discount rates are used to account for the present value of future costs. Using a low discount rate increases the present value of future costs, whereas using a high discount rate decreases the present value of future costs. The IWG cost estimates are provided for 2.5, 3 and 5 percent discount rates for average estimated costs of climate change impacts, and a 3 percent discount rate for a high-end estimate of the economic costs of climate change (95th percentile at 3 percent).

The SC-GHG is not a direct cost of the project, nor is the cost paid by the developer. Rather, the SC-GHG is intended to provide context for a project's impacts associated with the global economic costs of climate change and to provide a comparison between project alternatives. While SC-GHG provides a context to help assess the significance of a project's impact, it is not used here to directly determine the significance of the project's impact on climate change. Because no numerical thresholds have been defined or adopted by BIA or other federal agency, the project's significance is based on the project's consistency with applicable plans to reduce GHG emissions.

State and Local

California Air Resources Board

The California Air Resources Board (CARB), a part of the California Environmental Protection Agency (Cal/EPA), is responsible for the coordination and administration of both federal and State air pollution control programs within California. In this capacity, CARB conducts research, sets the CAAQS, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California as well as consumer products (e.g., hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's SIP, for which it works closely with the Air Quality Management District's and the USEPA.

California Clean Air Act and Regional Air Quality Standards

Air Quality

The California Clean Air Act of 1988 requires nonattainment areas to achieve and maintain the CAAQS by the earliest practicable date, as well as requires local air districts to develop plans for attaining the State O_3, CO, SO_2, and NOx standards.

At a local level, the Bay Area Air Quality Management District (BAAQMD) has jurisdiction over the southwestern portion of Solano County. The BAAQMD attains and maintains air quality conditions in Solano County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of the BAAQMD includes the preparation of plans for

the attainment of ambient air quality standards, adoption, and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution.

Odor

Odors can be produced by many substances in the environment, such as animals, human activities, industry processes, natural decomposition of materials, and vehicles. In general, the USEPA does not have regulations for odors per se but does control 188 toxic air pollutants. Sulfur dioxide SO_2 is the only regulated air pollutant that possesses a strong odor (Agency for Toxic Substances and Disease Registry, 2015).

Human related sources that could produce odors include waste processing and heavy industrial facilities such as WWTPs, landfills and composting facilities, chemical manufacturing facilities, and confined animal facilities (e.g., dairies). A potential natural occurring odor during wildfire season is smoke from wildfires. Odor would be noticeable if in close proximity to the Project Site, such as within two miles.

Because offensive odors rarely cause any physical harm and no requirements for their control are included in state or federal air quality regulations, local air districts often have no numerical rules or standards related to odor emissions, other than regulations related to nuisances. The BAAQMD 2017 *California Environmental Quality Act Air Quality Guidelines*, specifically Table 3-3 in the document, outlines the distances used to screen odors for certain land uses, but screening criteria is recommended for informational purposes in conjunctions with other assessment tools, such as odor parameters and complaint history (BAAQMD, 2017).

Global Climate Change

California has been a leader among states in outlining and aggressively implementing a comprehensive climate change strategy that is designed to result in a substantial reduction in total statewide GHG emissions in the future. California's climate change strategy is multifaceted and involves a number of State agencies implementing a variety of State laws and policies. These California laws and policies are summarized below.

Executive Order S-3-05

EO S-3-05 established the following statewide emission reduction targets:

- Reduce GHG emissions to 2000 levels by 2010.
- Reduce GHG emissions to 1990 levels by 2020.
- Reduce GHG emissions to 80 percent below 1990 levels by 2050.

EO S-3-05 created a Climate Action Team (CAT) headed by the Cal/EPA and including several other State jurisdictional agencies. The CAT is tasked by EO S-3-05 with outlining the effects of climate change on California and recommending an adaptation plan. The CAT is also tasked with creating a strategy to meet the target emission reductions. In April 2006, the CAT published an initial report that accomplished these two tasks.

California Global Warming Solutions Act of 2006 (Assembly Bill 32)

Assembly Bill (AB) 32 codifies a key requirement of EO S-3-05: the requirement to reduce State-wide GHG emissions to 1990 levels by 2020. AB 32 tasks CARB with monitoring State sources of GHGs and designing emission reduction measures to comply with the law's emission reduction requirements. However, AB 32 also continues the CAT's efforts to meet the requirements of EO S-3-05 and states that the CAT should coordinate overall state climate policy.

In order to accelerate the implementation of emission reduction strategies, AB 32 requires that CARB identify a list of discrete early action measures that can be implemented relatively quickly. In October 2007, CARB

published a list of early action measures that could be implemented and would serve to meet about a quarter of the required 2020 emissions reductions. In order to assist CARB in identifying early action measures, the CAT published a report in April 2007 that updated their 2006 report and identified strategies for reducing GHG emissions. In the October 2007 report, CARB cited the CAT strategies and other existing strategies that may be utilized in achieving the remainder of the emissions reductions.

AB 32 required that CARB prepare a comprehensive "scoping plan" that identifies all strategies necessary to fully achieve the required 2020 emissions reductions. CARB provided its first update to the Climate Change Scoping Plan in May 2014. The purpose of the update was to identify the next steps for California's leadership on climate change. The updated Plan outlined the progress California has made to date regarding near-term 2020 GHG limits, such as cleaner and more efficient energy, cleaner transportation, and CARB's Cap-and-Trade Program. The updated Plan identifies six key areas where further control strategies are needed: energy, transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure), agriculture, water, waste management, and natural and working lands. In 2016, the Legislature passed Senate Bill (SB) 32. This established a benchmark for California to reduce GHG emissions to 40 percent below 1990 levels by 2030. In December 2017, CARB adopted the 2017 Climate Change Scoping Plan, which provides a framework for achieving the 2030 target. The plan emphasizes the importance of transitioning to renewable energy sources, enhancing energy efficiency, promoting zero-emission vehicles, and strengthening carbon sequestration efforts on natural and working lands. The scoping plan also highlights the role of the Cap-and-Trade Program in driving emissions reductions across multiple sectors of the economy.

The most recent update is the 2022 Scoping Plan, which outlines a path to achieve carbon neutrality by 2045 and reduce anthropogenic GHG emissions by 85% below 1990 levels. The 2022 Scoping Plan focuses on significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reducing short-lived climate pollutants, supporting sustainable development, increasing action on natural and working lands to reduce emissions and sequester carbon, and capturing and storing carbon.

Executive Order S-01-07

EO S-01-07 mandates a State-wide goal to reduce the carbon intensity of transportation fuels by at least 10 percent by 2020. This target reduction was identified by CARB as one of the AB 32 early action measures identified in their October 2007 report.

Executive Order B-30-15

EO B-30-15 sets interim GHG targets of 40 percent below 1990 by 2030, to ensure California will meet the 2050 targets set by AB 32.

EO N-79-20/ Advanced Clean Cars II

Advanced Clean Cars II accelerates requirements that automakers deliver an increasing number of zero-emission light-duty vehicles each year (beginning with 2026 models) and codifies EO N-79-20. The regulation applies to automakers (not dealers) and covers only new vehicle sales. It does not impact existing vehicles on the road, which will still be legal to own and drive. Sales of new zero-emission vehicles and plug-in hybrids will start with 35% in 2026, build to 68% in 2030, and reach 100% in 2035. In other words, 100% of new cars and light trucks sold in California will be zero-emission vehicles, including plug-in hybrid electric vehicles, by 2035.

Senate Bill 350

SB 350 codifies the GHG targets for 2030 set by EO B-30-15. To meet these goals, SB 350 also raises the Renewables Portfolio Standards from 33 percent renewable generation by 2020 to 50 percent renewable generation by December 31, 2030.

Senate Bill 375

SB 375 provides for the creation of a new regional planning document called a sustainable communities strategy (SCS). A SCS is a blueprint for regional transportation infrastructure and development that is designed to reduce GHG emission from cars and light trucks to target levels that will be set by CARB for 18 regions throughout California. Each of the various metropolitan planning organizations must prepare an SCS and include it in that region's regional transportation plan. The SCS can influence transportation, housing, and land use planning. CARB will determine whether the SCS will achieve the region's GHG emissions reduction goals. Under SB 375, certain qualifying in-fill residential and mixed-use projects would be eligible for streamlined California Environmental Quality Act (CEQA) review.

AB 1279 (California Climate Crisis Act)

AB 1279 declares the policy of the State to achieve net zero greenhouse gas emissions as soon as possible, but no later than 2045. By 2045, statewide anthropogenic greenhouse gas emissions should be reduced to at least 85% below the 1990 levels, and thereafter, the State aims to achieve and maintain net negative greenhouse gas emissions. AB 1279 requires the State Board to work with relevant State agencies to ensure that updates to the scoping plan identify and recommend measures to achieve these policy goals and to identify and implement a variety of policies and strategies that enable carbon dioxide removal solutions and carbon capture, utilization, and storage technologies in California. AB 1279 also requires the State Board to submit an annual report.

Climate Change and Its Potential Impacts

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. GHGs include all of the following compounds: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (Health & Safety Code § 38505[g]). In addition to natural sources, human activities are exerting a substantial and growing influence on climate by changing the composition of the atmosphere and the ocean, and by modifying the land surface through deforestation and urbanization that reduces carbon capture and decreases albedo (Intergovernmental Panel on Climate Change [IPCC], 2014). In particular, increased consumption of fossil fuels has substantially increased atmospheric levels of GHGs. Emissions of these gases are attributable to human activities associated with the industrial/manufacturing, utilities, transportation, residential, commercial, and agricultural sectors (CARB, 2023).

In 2021, transportation generated 39% of California's GHG emissions. This was followed by the industrial sector (22%), electricity generation in state (11%), residential (8%), agriculture and forestry (8%), commercial (6%), and electricity imports (5%) (CARB, 2023). Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion, among other sources. CH_4 results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2 include uptake by vegetation and dissolution into the ocean.

In 2008, the City of Vallejo developed a community-wide baseline GHG emission inventory to identify the major sources of GHG emissions within the City and establish a baseline for measuring future progress. The primary sources of GHG emissions were transportation (47%), residential (29%), commercial/industrial (19%), waste (2%), water (1%), and off-road (1%). The City emitted approximately 588,040 metric tons of carbon dioxide equivalent (MT CO_2e) in 2008 (City of Vallejo, 2012). Climate change has the potential to impact the natural and economic environment of both the City and the BAAQMD.

According to the United Nations IPCC and the USEPA, it is very likely (greater than 95% probability) that human activity is responsible for rising temperatures. The IPCC expects global temperatures to increase another 2 to 10 degrees Fahrenheit by 2100, depending on how much atmospheric GHG concentrations continue to rise.

Climate change has the potential to impact California and the Bay Area natural and economic environment. The following is an abbreviated list of potential climate change impacts.

- Rising sea levels along the California coastline, particularly in San Francisco and the Sacramento-San Joaquin River Delta due to ocean expansion.
- Extreme heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent.
- An increase in heat-related human deaths and infectious diseases and a higher risk of respiratory problems caused by deteriorating air quality.
- Reduced snow pack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies.
- Potential increase in the severity of winter storms, affecting peak stream flows and flooding.
- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield.
- Changes in distribution of plant and wildlife species due to changes in temperature, competition of colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

Bay Area Air Quality Management District (BAAQMD)

BAAQMD publishes thresholds of significance for evaluating the significance of climate impacts from land use projects and plans. Its most recent guidelines for climate can be found in its 2022 Justification Report. The thresholds described within the report evaluate significance based a project's effect on California's efforts to meet the State's long-term climate goal rather than setting emission standards. **Table 5** shows the criterium the project must meet during operation in order to be considered to have a less than significant impact on climate change. No standards are set for construction of a project because of their small one-time contribution to climate change (BAAQMD, 2022).

Table 5: BAAQMD's Climate Change Thresholds for Land Use Projects*

A	1. Buildings a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development). b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
	2. Transportation a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA: i. Residential projects: 15 percent below the existing VMT per capita ii. Office projects: 15 percent below the existing VMT per employee iii. Retail projects: no net increase in existing VMT b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.
B	Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Source: BAAQMD, 2022

* A project must meet either criterium A or B to be considered to have a less than significant impact.

Vallejo Climate Action Plan (CAP)

The Vallejo CAP outlines steps for Vallejo to cut GHG emissions and prepare for climate impacts. To reduce emissions, the plan promotes renewable energy, energy-efficient buildings, and cleaner transportation options like public transit, biking, and electric vehicles. It also addresses climate risks such as sea-level rise, drought, and extreme weather by proposing measures to strengthen infrastructure, improve water management, and increase green spaces. Community involvement is encouraged through programs that help residents and businesses adopt sustainable practices. The CAP aligns with California's climate goals under AB 32 and follows guidance from state agencies like the California Air Resources Board (CARB).

Environmental Setting

Regional Meteorology

During summer and fall months, high pressure offshore, coupled with thermal low pressure in the Central Valley, draws marine air eastward through the Carquinez Strait almost daily. Temperatures along the coast and inland tend to remain moderate. Winter temperatures range from cool overnight to moderate during the day, while summer temperatures range from moderate overnight to warm during the day. Afternoon westerly winds are common in the southern portion of the county, along the Carquinez Strait. Annual rainfall totals range from 13 inches near the coast to 22 inches inland in Fairfield (BAAQMD, 2017).

BIOLOGICAL RESOURCES – SECTION 3.5 OF THE EA

Regulatory Setting

Federal

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) protects species that are at risk of extinction and provides for the conservation of the ecosystems on which they depend. The U.S. Fish & Wildlife Service (USFWS) and the National Oceanic and Atmosphere Administration, Fisheries Service (NOAA Fisheries) share responsibility for implementing FESA. Generally, USFWS manages terrestrial and freshwater species, while NOAA Fisheries is responsible for marine and anadromous species. Section 9 (§ 1538) prohibits the "take" of a listed species by anyone, including private individuals and state and local agencies. Threatened and endangered species on the federal list (50 CFR Sections 17.11 and 17.12) are protected from take, which is defined as direct or indirect harm. If "take" of a listed species is incidental to an otherwise lawful activity, this triggers the need for consultation under Section 7 of the FESA for federal agencies.

Pursuant to the requirements of the FESA, a federal agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present on a proposed project site and whether a proposed project will have a potentially significant impact upon such species. Under the FESA, habitat loss is considered to be an impact to the species. In addition, the agency is required to determine whether a project is likely to jeopardize the continued existence of any species that is proposed for listing under the FESA or to result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC Section 1536[3], [4]).

Magnuson-Stevens Act and Sustainable Fisheries Act

The Magnuson–Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) is the primary law that governs marine fisheries management in U.S. federal waters. First passed in 1976, the Magnuson-Stevens Act fosters the long-term biological and economic sustainability of marine fisheries. Its objectives include: preventing overfishing; rebuilding overfished stocks; increasing long-term economic and social benefits; ensuring a safe and sustainable supply of seafood; and protecting habitat that fish need to spawn, breed, feed, and grow to maturity. The Sustainable Fisheries Act of 1996 (Public Law 104-297) amended the Magnuson-Stevens Act to establish new requirements for fishery management councils to identify and describe Essential Fish Habitat (EFH) and to protect, conserve, and enhance EFH for the benefit of fisheries. EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The Sustainable Fisheries Act also established a federal EFH consultation process that advises federal agencies to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH. Consultation is required if a federal agency has authorized, funded, or undertaken part or all of a proposed activity and the action will adversely affect EFH. An adverse effect includes direct or indirect physical, chemical, or biological alternations to waters or substrate, species and their habitat, quality and/or quantity of EFH, or other ecosystem components. If a federal agency determines that an action will not adversely affect EFH, and NOAA Fisheries agrees, no consultation is required. Fishery management councils can designate Habitat Areas of Particular Concern, specific areas within EFH that have extremely important ecological functions and/or are especially vulnerable to degradation.

Migratory Bird Treaty Act

Migratory birds are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The direct injury or death of a migratory bird due to construction activities or other construction-related disturbance that causes nest abandonment, nestling abandonment, or forced fledging would be considered take under federal law. As such, project-related disturbances must be reduced or eliminated during the nesting season. The general nesting season extends from February 15 to September 15.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act was originally enacted in 1940 to protect bald eagles and was later amended to include golden eagles (16 USC Subsection 668-668). This act prohibits take, possession, and commerce of bald and golden eagles and associated parts, feathers, nests, or eggs with limited exceptions. The definition of take is the same as the definition under the FESA. The USFWS established five recovery programs in the mid-1970s based on geographical distribution of the species, which California located in the Pacific Recovery Region. Habitat conservation efforts in the Pacific Recovery Region, including laws and management practices at federal, state, and community levels, have helped facilitate bald eagle population increases. Critical habitat for bald and golden eagles was not designated as part of the Pacific Recovery Plan created under FESA. Likewise, critical habitat was not designated by regulation under FESA. In 1995, the USFWS reclassified the bald eagle from endangered to threatened under FESA in the contiguous 48 states, excluding Michigan, Minnesota, Wisconsin, Oregon, and Washington where it had already been listed as threatened. In 2007, the bald eagle was federally delisted under FESA. However, the provisions of the act remain in place for protection of bald and golden eagles.

Clean Water Act - Sections 404 and 401

Any project that involves discharge of dredged or fill material into jurisdictional Waters of the U.S. must first obtain authorization from the USACE, under Section 404 of the CWA. Projects requiring a 404 permit under the CWA also require a Section 401 certification from either the USEPA for trust land, or the RWQCB for non-trust

land. These two agencies also administer the NPDES general permits for construction activities disturbing one acre or more.

Effective September 8, 2023, the USEPA and the USACE have issued a new final rule in the Code of Federal Regulations to conform the definition of 'waters of the United States' to the 2023 Supreme Court's May 25, 2023 decision in Sackett vs. EPA. Under the new final rule, tributaries and wetlands must have a continuous surface connection to navigable waterways to be considered jurisdictional under the Clean Water Act. Only those relatively permanent, standing, or continuously flowing bodies of water meet the current definition.

In certain states where litigation regarding this definition is ongoing, the pre-2015 definition of waters of the U.S. is in effect. California is not one of these states and currently operates under the definition as promulgated under the new final rule.

State and Local

California Endangered Species Act

The California Endangered Species Act (CESA) declares that deserving plant or animal species will be given protection by the state because they are of ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. The CESA established that it is State policy to conserve, protect, restore, and enhance state-listed species and their habitats. Under State law, plant and animal species may be formally listed by the California Fish and Game Commission.

The CESA authorizes that private entities may take listed species under FESA and CESA, pursuant to a federal incidental take permit issued in accordance with Section 10 of the FESA, if the California Department of Fish and Wildlife (CDFW) certifies that the incidental take statement or incidental take permit is consistent with the CESA (California Fish & Game Code § 2080.1[a]).

California Fish and Game Code

The California Fish and Game Code defines "take" (Section 86) and prohibits take of a species listed under the CESA (California Fish and Game Code § 2080), or otherwise special-status (California Fish and Game Code §§ 3511, 4700, and 5050). Section 2081(b) and (c) of the CESA allows CDFW to issue an incidental take permit for a State-listed species if specific criteria outlined in Title 14 CCR §§ 783.4(a), (b) and CDFW Code § 2081(b) are met. The CDFW Code § 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by the code. Section 3503.5 states that it is unlawful to take, possess, or destroy any birds in the taxonomic order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA or any part of such migratory non-game bird except as provided by rules and regulations adopted by the U.S. Secretary of the Interior under provisions of the MBTA. If a project is planned in an area where a species or specified bird occurs, an applicant must design the project to avoid all take; the CDFW cannot provide take authorization under the CESA.

Native Plant Protection Act of 1977

Native Plant Protection Act of 1977 and implementing regulations in Section 1900 et seq. of the California Fish and Game Code designate special-status plant species and provide specific protection measures for identified populations. The CDFW administers the Native Plant Protection Act.

City of Vallejo General Plan

The City of Vallejo General Plan is the master policy document that provides the general framework for all zoning and land use decisions within a community. The Nature and Built Environment Element includes the City's objectives and policies regarding biological resources, including natural resources, scenic resources, open space, and urban greening. This section of the General Plan identifies three main goals; Beautiful City; Innovation, Entrepreneurship, and successful Local Business; and Sustainable Economic Development.

City of Vallejo Municipal Code

The City of Vallejo Municipal Code identifies zoning designations for parcels that fall within the City as well as allowable uses for such parcels, including ensuring compatible land use zoning for open space areas and adjacent lands. Additionally, the Municipal Code sets forth stormwater treatment and discharge standards protective of water quality. Finally, the Municipal Code identifies tree removal requirements and sets forth requirements for obtaining an inventory of trees to be removed and tree replacement requirements.

Solano Multispecies Habitat Conservation Plan

The Project Site is located within the plan area of the draft Solano Multispecies Habitat Conservation Plan (SMHCP). The City of Vallejo is a plan participant, and the full geographical extent of the City falls within the plan area, which indicates that the Project Site is part of the plan area. The SMHCP is currently in administrative draft form, and a final plan has not yet been adopted. The purpose of the plan is to provide a programmatic analysis of development impacts within the plan area and to provide a streamlined permitting process. Covered species include California red-legged frog, Callippe silverspot butterfly, northwestern pond turtle, and salt marsh harvest mouse.

Environmental Setting

Habitat Types

Habitats that occur within the Project Site consist of ruderal/developed, riparian scrub, freshwater marsh, pasture, and annual grassland/rock outcrop. These habitats are shown on **Figure 3.5-1** of the EA. Acreages of habitat within the Project Site are included below. Representative site photographs are provided in Attachment B of **Appendix H-1**, and a list of plant and animal species observed during the 2024 site visits and previous site visits is included as Attachment C of **Appendix H-1**.

Ruderal/Developed (7.4 acres)

Ruderal/developed habitats are those areas that are highly modified from their natural state and are subject to intensive land management, paving, or similar. Within the Project Site, ruderal developed areas included an unpaved access drive and informal parking areas, fencing, and horse shelters. Vegetation was sparse to absent in this area. Where vegetation did occur, it was dominated primarily by non-native grasses and invasive forbs.

Riparian Scrub (0.4 acre)

This community is found on the western edge of the Project Site; it is associated with an intermittent drainage that is fed by both the flank of Sulphur Springs Mountain as well as road runoff from I-80. The vegetation is dominated by arroyo willow (*Salix lasiolepis*) with an understory of Himalayan blackberry (*Rubus discolor*) and poison oak (*Toxicodendron diversilobum*), and limited areas of broad-leaved cattail (*Typha latifolia*). Vegetation along the edge of the riparian habitat included sweet fennel (*Foeniculum vulgare*) and coyote brush (*Baccharis*

pilularis). The riparian habitat transitions to either marsh or pasture, depending upon the local topography. This feature is associated with an intermittent channel.

Freshwater Marsh (3.4 acres)

Freshwater marsh habitat was observed in the valleys of hills. The dominant plants in these areas are rushes (e.g. *Juncus bufonius*) and spikerushes (*Eleocharis*). Facultative grasses and forbs are also present, such as perennial ryegrass (*Lolium perenne*), Bermuda grass (*Cynodon dactylon*), curly dock (*Rumex crispus*), common monkeyflower (*Mimulus guttattus*), and pennyroyal (*Mentha* sp.). Ponded areas contain floating plants such as watercress (*Nasturtium officinale*). The water quality of these marshes has been impacted by cattle, which are allowed to wallow and graze in the wetlands.

Pasture (114.6 acres)

The majority of the Project Site is a simplified non-native grassland containing perennial ryegrass (*Lolium perenne*), wild oats (*Avena fatua*), soft chess (*Bromus hordeaceus*), and other pasture grasses. These areas are subject to significant grazing pressure and may have been plowed or conditioned previously. Non-native forbs are abundant, such as thistles (*Silybum*, *Carduus*), filarees (*Erodium*), star thistle (*Centaurea solstitialis*), bristly ox-tongue (*Picris echioides*), poison hemlock (*Conium maculatum*), fennel (*Foeniculum vulgare*), black mustard (*Brassica nigra*), and spiny cocklebur (*Xanthium spinosum*). Large patches of artichoke thistle (*Cynara cardunculus*) were also observed within this habitat.

Annual Grassland/Rock Outcrop (30.6 acres)

This non-native annual grassland community is similar to the pasture community described above, but contains a greater diversity of species and greater number of native species. This is due in part to the rocky terrain, which is more difficult for cattle to graze, and because the metamorphic soils and rock outcrops provide additional habitat niches. Native wildflowers were abundant, such as California poppy (*Eschscholzia californica*), golden violet (*Viola pedunculata*), owl's clover (*Castilleja*), and blue dicks (*Dichelostemma capitatum*). Seeps were common at the base of rock outcrops, and these wet areas created microhabitats for specialized plants, such as ferns and succulents (*Dudleya* spp.).

Oak Woodland (3.6 acres)

A narrow strip of oak woodland occurs along the northern boundary of the Project Site along a hilltop crest. This habitat contains a significant canopy cover of coast live oak (*Quercus agrifolia*). Ground cover vegetation is similar to species observed within the annual grassland/rock outcrop habitat.

Special-Status Species

For the purposes of this assessment, "federally listed species" has been defined to include those species that are listed as Endangered or Threatened under FESA or formally proposed candidates for listing. For the purposes of this assessment, "State-listed species" has been defined to include: 1) species listed as Threatened or Endangered under CESA or proposed candidates for listing; 2) Fully Protected species, as designated by the CDFW; and 3) plant species meeting the definition of 'Rare' or 'Endangered' under California Environmental Quality Act Guidelines 14 CCR § 15125 (c) and/or 14 CCR § 15380, including plants listed on CNPS Lists 1A (presumed extinct in California), 1B (rare, threatened, or endangered in California and elsewhere), 2A (presumed extirpated in California, but more common elsewhere), and 2B (rare, threatened, or endangered in California, but more common elsewhere).

CULTURAL AND PALEONTOLOGICAL RESOURCES – SECTION 3.6 OF THE EA

Regulatory Setting

Federal

National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA), as amended, and its implementing regulations found in 36 CFR Part 800 require federal agencies to identify cultural resources that may be affected by actions involving federal lands, funds, or permitting. The BIA must comply with Section 106 for the proposed trust acquisition. The significance of the resources must be evaluated using established criteria outlined in 36 CFR 60.4, as described below.

If a resource is determined to be a historic property, Section 106 of the NHPA requires that effects of the federal undertaking on the resource be determined. A historic property is defined as:

> *…any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion in the National Register of Historic Places, including artifacts, records, and material remains related to such a property… (NHPA Sec. 301[5])*

Section 106 of the NHPA prescribes specific criteria for determining whether a project would adversely affect a historic property, as defined in 36 CFR 800.5. An impact is considered adverse when prehistoric or historic archaeological sites, structures, or objects that are listed on or eligible for listing in the National Register of Historic Places (NRHP) are subjected to the following:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- Neglect of a property that causes its deterioration; and
- Transfer, lease, or sale of the property out of federal control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

If the historic property will be adversely affected by the undertaking, then prudent and feasible measures to resolve adverse impacts must be taken. The State Historic Preservation Office must be provided an opportunity to review and comment on these measures prior to project implementation.

National Register of Historic Places

The eligibility of a resource for listing in the NRHP is determined by evaluating the resource using criteria defined in 36 CFR § 60.4 as follows.

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, association, and:

A) That are associated with events that have made a significant contribution to the broad patterns of our history;
B) That are associated with the lives of persons significant in our past;
C) That embody the distinctive characteristics of a 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 have yielded, or may be likely to yield, information important to prehistory or history.

Sites younger than 50 years, unless of exceptional importance, are not eligible for listing in the NRHP.

In addition to meeting at least one of the criteria listed above, the property must also retain enough integrity to enable it to convey its historic significance. The NRHP recognizes seven aspects or qualities that, in various combinations, define integrity. These seven elements of integrity are location, design, setting, materials, workmanship, feeling, and association. To retain integrity a property will always possess several, and usually most, of these aspects.

While most historic buildings and many historic archaeological properties are significant because of their association with important events, people, or styles (Criteria A, B, and C), the significance of most prehistoric and some historic-period archaeological properties is usually assessed under Criterion D. Criterion D stresses the importance of the information contained in an archaeological site rather than its intrinsic value as a surviving example of a type or its historical association with an important person or event. It places importance not on physical appearance but rather on information potential.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA), 25 USC 3001 et seq*.,* provides a process for museums and federal agencies to return Native American cultural items – human remains, funerary objects, sacred objects, or objects of cultural patrimony – to lineal descendants, and culturally affiliated Indian tribes and Native Hawaiian organizations. NAGPRA includes provisions for unclaimed and culturally unidentifiable Native American cultural items, intentional and inadvertent discovery of Native American cultural items on federal and Tribal lands, and penalties for noncompliance and illegal trafficking.

Archaeological Resources Protection Act of 1979

The Archaeological Resources Protection Act of 1979 (ARPA; Public Law 96-95; 16 USC 470aa-mm) provides for the protection of archaeological resources and sites that are on public and Indian lands, and fosters increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data that were obtained before October 31, 1979. ARPA also provides for penalties for noncompliance and illegal trafficking.

Paleontological Resources Preservation Act

Paleontological resources are defined as the traces or remains of prehistoric plants and animals. Such remains often appear as fossilized or petrified skeletal matter, imprints, or endocasts, and reside in sedimentary rock layers. Paleontological resources are considered important for their scientific and educational value. Fossil remains of vertebrates are considered significant. Invertebrate fossils are considered significant if they function

as index fossils. Index fossils are those that appear in the fossil record for a relatively short and known period of time. This allows geologists to interpret the age range of the geological formations in which they are found.

The Paleontological Resources Preservation subtitle of the Omnibus Public Land Management Act, 16 USC 470aaa to aaa-11 requires the U.S. Department of Agriculture (USDA) and the U.S. Department of the Interior to issue implementation regulations to provide for the preservation, management, and protection of paleontological resources on federal lands and ensure that these resources are available for current and future generations to enjoy as part of America's national heritage.

Environmental Setting

Prehistoric Overview

Present-day researchers identify four periods and associated patterns in the San Francisco Bay area (see **Table 6**). Archaeological evidence is rare for occupation in the San Francisco Bay Area dating earlier than 6,000 years ago during the Early Holocene. The Early Period saw the emergence of new technologies (e.g., mortars and pestles and shell beads) that reflect increases in sedentism, mortuary complexity, and regional trade. The Middle Period represents a continuation and expansion of the Early Period. The period exhibits the use of a rich and varied diet that included acorns, fish, shellfish, and large and small mammals. The Late Period is characterized by an increase in population and the number of settlements, the appearance of status differentiation, and the appearance of shell beads as a form of currency.

Table 6: Archeological Time Periods and Patterns in the North Bay Area

Temporal Period	Cultural Pattern	Timeframe*
Early Holocene (Lower Archaic)	Borax Lake Pattern	8000–3500 cal B.C.
Early Period (Middle Archaic)	Mendocino Pattern	3500–500 cal B.C.
Middle Period (Upper Archaic)	Berkeley Pattern	500 cal B.C.–cal A.D. 1000
Late Period (Emergent)	Augustine Pattern	cal A.D. 1000 to Historic Contact

* The raw radiocarbon dates have been calibrated (cal) to provide calendar dates.

Ethnographic Overview

Prior to the arrival of Euroamericans in the Bay area, California was inhabited by groups of Native Americans speaking more than 100 different languages and occupying a variety of ecological settings (Kroeber, 1925). The project area is within the ethnographic territory of the Southern Wintun or Patwin (Johnson, 1978). Patwin are members of the widespread Penutian language family, which was prevalent throughout California during the late prehistoric and historic era (e.g., A.D. 1800). There are several sources on the Patwin. This brief ethnographic overview is primarily based on research presented by Cook (1976) and Johnson (1978).

Patwin were organized into tribelets, which were usually composed of a principal village and a few satellite settlements. Tribelets were small, autonomous, and sometimes bounded by the limits of a small drainage. Each tribelet had a head chief and each village had a chief who administered its economic and ceremonial activities. The position of chief was usually inherited through the male line, but village elders occasionally chose some chiefs. The chief possessed political, ceremonial, and economic powers and enjoyed high prestige. Patwin

subsistence relied on hunting, fishing, and gathering a wide variety of plant resources that were located within their territory. Acorns were a major part of their diet, and were obtained from hill and mountain oaks communally owned by the tribelet.

The influx of European and Spanish explorers and settlers during the 1830s and 1840s rapidly changed Patwin demography. The discovery of gold at Sutter's Mill in Coloma in 1848, however, was the catalyst that caused a dramatic alteration of both Native American and Euroamerican cultural patterns in California. Initially, the Euroamerican population grew slowly, but soon exploded as the presence of large deposits of gold was confirmed in the Sacramento area. The population of California quickly swelled from an estimated 4,000 Euroamericans in 1848 to 500,000 in 1850. The large influx of Euroamerican immigrants had a positive effect on growth and economic development in California, but a negative effect on Native American cultures. Indeed, the discovery of gold in California marked the beginning of a relatively rapid decline of both Native American populations and culture.

The Project Site is in traditional Patwin territory, but the Scotts Valley Band of Pomo Indians (SVBPI) have traditional and historic ties to Vallejo and the surrounding area (Theodoratus 2016 and Hurtudo and Theodaratus 2016). SVBPI "traditional territory" was located on the western side of Clear Lake, however, beginning in the early 1800s they were incorporated into the Mexican colonial system of missions and rancherias and many individuals and families were relocated to areas near the project site (Hurtado and Theodoratus, 2016). In 1911 the SVBPI was provided with a 56.88-acre parcel of land for a Rancheria, but the land was determined unsuitable for subsistence and was terminated (1965) with deeds given to individual residents called distributees (Theodoratus, 2016). After termination many of the former residents were once again relocated to the Bay Area near the project site under the Indian Relocation Act of 1956 (P.L. 959).

Historical Overview

Early European exploration near the Subject Parcel included expeditions by Gabriel Moraga in 1810 and Fathers José Altimira and Alferez José Sánchez in 1823, seeking mission sites. These explorations grew more violent as they pursued and captured indigenous people who had escaped coastal missions. By 1820, many southern Patwin-speaking groups, such as the Suisuns, Tolenas, and Malacas, were incorporated into the mission system, particularly Mission San Francisco. In 1821, Mexico gained independence and declared California part of its empire, marking the beginning of the Mexican Period. The missions were secularized in 1833 and lands were divided among the Californios. The grants, known as ranchos, enriched their recipients while subjugating native tribes as laborers. The Rancho Soscol grant, which included the project site, was given to General Vallejo in 1843, and he used the property for grazing cattle and horses However, after the Mexican-American War, land grant claims had to be defended in American courts, and Vallejo's Soscol grant was not upheld (**Appendix H-1**).

Paleontological Resources

Paleontological resources are the fossilized remains of plants and animals, including vertebrates, invertebrates, and fossils of microscopic plants and animals (microfossils). The age and abundance of fossils depends on the location, topographic setting, and particular geologic formation in which they are found. The subject parcel is located on the western edge of the Sulphur Springs Mountain. Topography includes a steep knoll to the south, a level area in the south-central portion of the site, and steeply rising landforms to the north, dotted with trees, ephemeral drainages, and rock outcrops. Surface soils consist primarily of well-drained Toomes very stony loam and Dibble clay loam, as well as poorly drained Clear Lake clay (**Appendix H-1**). The University of California Museum of Paleontology Database was accessed and reviewed for any paleontological resources within the

same setting as the Project Site. According to the database, 226 paleontological resources have been identified within Solano County (UCMP, 2024).

Cultural Resource Investigations

Multiple cultural resources investigations have been conducted within the Project Site, including archival research at the Northwest Information Center, Sonoma State University, Native American contact, and field inspections. The following summarizes relevant, non-confidential information from the following technical studies which are included in **Appendix I**:

- Cultural Resources Survey Report (**Appendix I-1**; AES-Montrose, 2023). This report assessed the western 129 acres of the Project Site, identified as APN 182-010-010.
- Cultural Resources Study for the Ted Lee Land Development Project, Vallejo, Solano County, California (**Appendix I-2**; Origer, 2020). This report assessed the southeastern portion of the Project Site, consisting of approximately 32.5 acres, identified as APNs 182-020-080, 182-020-010 and 182-020-020.
- Cultural Resources Investigations for the Scotts Valley Band of Pomo Indians Casino and Tribal Housing Fee-to-Trust Project, Solano County , California (**Appendix I-4**; Natural Investigations Company, 2024). This cultural resource investigation was prepared for the entire 160-acre APE and incorporates the results of previous cultural resources reports into a single report for the entire APE.

Native American Contact

As described in **Appendix I-1**, AES-Montrose spoke with Tribal Monitor Jesse Gonzalez on September 15, 2022. Mr. Gonzalez mentioned a known chert quarry but was unaware of any other cultural resources within the Project Site. As described in **Appendix I-2**, letters were sent by Origer in December 2019 to the following tribes to inform them of the cultural resources study taking place for the then proposed Solano Ranch Project: Cortina Rancheria-Kletsel Dehe Band of Wintun Indians, Confederated Villages of Lisjan, United Auburn Indian Community of the Auburn Rancheria, and Yocha Dehe Wintun Nation. No responses to the notification letter were received. After the preparation of this EA was initiated, the California Native American Heritage Commission (NAHC) conducted a review of the Sacred Lands File in March 2024, which did not identify any sites. In addition, the NAHC provided a list of recommended Native American contacts (**Appendix I-3**). As described in **Appendix I-4**, letters were sent to the following tribes in June 2024 informing them of the study and requesting any known information relative to tribal cultural resources within the Project Site: Cachil Dehe Band of Wintun Indians of the Colusa Indian Community, Cortina Rancheria-Kletsel Dehe Band of Wintun Indians, Confederated Villages of Lisjan, Yocha Dehe Wintun Nation, and Guidiville Rancheria of California. A contractor engaged by the Yocha Dehe Nation responded indicating that Yocha Dehe Nation has expressed concerns about any future development activity on the Project Site and requested information regarding the project and status of the environmental review; a response to the information request was provided in June 2024 (**Appendix I-4**). No other responses were received.

Subsequently, the BIA sent letters in October 2024 inviting the following tribes to participate in Section 106 consultation and transmitting the Cultural Resources Investigations (**Appendix I-4**) for their review and consideration: Cachil Dehe Band of Wintun Indians of the Colusa Indian Community, Cortina Rancheria-Kletsel Dehe Band of Wintun Indians, Yocha Dehe Wintun Nation, and Guidiville Rancheria of California. These letters are included in **Appendix I-3**. To date only the Yocha Dehe Wintun Nation has accepted the invitation to consult. The BIA is currently undergoing consultation under Section 106 of the NHPA with Yocha Dehe Wintun Nation.

Section 106

As described in this section, the BIA has carried out or initiated efforts pursuant to 36 CFR Part 800.4 to identify whether historic properties are present within the Project Site or Area of Potential Effect (APE). Consistent with 36 CFR Part 800.4(a) these efforts included: 1) determining the area of potential effect; 2) reviewing existing information on historic properties within the area of potential effects, including any data concerning possible historic properties not yet identified; 3) seeking information, as appropriate, from consulting parties, and other individuals and organizations likely to have knowledge of, or concerns with, historic properties in the area, and identify issues relating to the undertaking's potential effects on historic properties; and 4) requesting information from Indian Tribes to assist in identifying properties which may be of religious and cultural significance to them and may be eligible for the National Register. As described above, the BIA is currently engaging in consultation under Section 106 of the NHPA with Yocha Dehe Wintun Nation.

Using the information gathered during these efforts, the BIA determined that a finding of No Historic Properties Affected is appropriate for the Proposed Action. Pursuant to 36 CFR Part 800.4(d)(1), the BIA submitted its initial request for concurrence to the State Historic Preservation Office (SHPO) on October 29, 2024. The BIA is currently engaging in consultation under Section 106 of the NHPA with Yocha Dehe Wintun Nation, SHPO, and the Advisory Council on Historic Preservation (ACHP).

Records and Literature Search, 129-acre APN 182-010-010

A review of all recorded historic resources and resource inventory reports was conducted at the Northwest Information Center of the California Historical Resources Inventory System, on December 22, 2015, and September 2, 2022. Results showed that five previous surveys had been conducted, including all but the very northern edge of the parcel, and one cultural resource had been previously recorded within APN 182-010-010. CA-SOL-275, identified in 1980, includes a prehistoric Franciscan chert quarry and a historic serpentine quarry with artifacts indicating use from around 1900-1930. Records searches within a ½ mile radius of the Project Site revealed one formal resource and five informal resources (**Appendix I-1**).

Historical aerial images and topographic maps were examined to understand past land uses on APN 182-010-010and its surroundings. The 1937 image reveals I-80, Columbus Parkway, agricultural areas, and residences nearby. Evidence of drainage or roads, along with small agricultural areas, is seen. The 1947 image suggests a potential mining/quarry area. Mowing is evident by 1958, with residential development starting in 1963. Electrical transmission towers and a water tank are observed in later images, along with commercial development in 1993. The 1896 map shows the beginnings of I-80 and Columbus Parkway, with a nearby residence. By 1940, a transmission line spans APN 182-010-010, and a residence and access road emerge but disappear by 1950. Another transmission line appears in 1950, with no other structures noted on APN 182-010-010 (**Appendix I-1**).

Field Surveys, 129-acre APN 182-010-010

January 2016

AES Archaeologist Charlane Gross conducted a pedestrian field survey of APN 182-010-010 in January 2016. The survey employed parallel pedestrian transects spaced 15 meters apart, with a focus on the area around CA-SOL-275. However, newly growing spring vegetation obscured ground surface visibility to varying degrees, averaging around 40 percent overall. The field inspection focused on areas around CA-SOL-275, documenting the main mine pit, mining debris, and chert artifacts. Discrepancies were noted compared to the original 1980 descriptions, particularly the absence of milling equipment. Instead, scattered lumber, metal sheeting, and metal cable were found. Additionally, two additional mine pits were discovered northeast of the original site,

forming a larger complex. A significant accumulation of tailings from these mine pits was also observed (**Appendix I-1**).

September 9, 2022

The September 2022 AES survey of APN 182-010-010 revealed new discoveries, including two historic era mine adit/exploratory tunnels—one definite and the other possible but not completely clear. Additionally, a spring box with a small iron catchment tank and a shallow prospect area east of the mine pits were observed. The complex, approximately 2,570 feet long and 700 feet wide, features tailings piles of varying shapes and heights surrounding the mine pits, with drainages formed between some of them. AES recommended that the chert quarry and the serpentine mine complex do not meet the criteria for inclusion on the NRHP due to their limited historical or archaeological significance (**Appendix I-1**).

Records and Literature Search, 32.5 acres APNs 182-020-080, 182-020-010, and 182-020-020

Archival research included an examination of the library and project files at Tom Origer & Associates. A review of archeological site maps, records, survey reports, and other materials was conducted at the Northwest Information Center at Sonoma State University on December 6, 2019. Information sources included listings from the National Register of Historic Places, California Historical Landmarks, California Register of Historical Resources, and California Points of Historical Interest, as noted in the Office of Historic Preservation's Historic Property Directory. Results found that the southeastern 32.5-acre portion of the Project Site was included in two previous cultural resource studies. Although these studies identified cultural resources, none were found within the southeastern 32.5-acre portion of the Project Site. Additionally, seven studies have been conducted within a half-mile of the Project Site. Three resources were identified within a ½ mile radius of the Project Site, although they were never formally documented. The closest resource is approximately 1,100 feet from the Project Site and does not extend into it (**Appendix I-2**).

To predict the sensitivity for buried archaeological sites, a model was formulated based on the Project Site's landform age, slope, and proximity to water. Results show there is a moderate potential for buried archaeological site indicators within the southeastern 32.5-acre portion of the Project Site (**Appendix I-2**). In addition, Meyer and Rosenthal (2007) determined that the Project Site consists of pre-Holocene geological deposits. These deposits typically pre-date human occupation of the area and exhibit a low potential for the presence of buried deposits of cultural resources.

Because the OHP determined that structures older than 45 years old could be considered important historical resources, archival research involved examining 19th and 20th-century maps and aerial photographs to understand historical development in the area. The maps revealed a building within the southeastern 32.5-acre portion of the Project Site as early as 1896, with a road at the western end of the property. Additional buildings appeared between 1901 and 1940. These structures were removed between 1982 and 1993, according to map and aerial photograph evidence. The road was removed between 1901 and 1940. The current buildings within the southeastern 32.5-acre portion of the Project Site associated with the horse facility were constructed between 1993 and 2002 (**Appendix I-2**).

Field Survey, 32.5-acre APN 182-020-080, 182-020-010, 182-020-020

January 3, 2020

On January 3, 2020, Taylor Alshuth and Julia Karnowski conducted a field survey of APNs 182-020-080, 182-020-010 and 182-020-020, spending approximately 5.5 hours in the field. The surface examination involved walking in 10 to 15-meter transects, with varying ground visibility due to vegetation and buildings, and debris piles

scattered in the western half of the southeastern 32.5-acre portion of the Project Site. Hoes were used as needed to expose the ground surface. Additionally, four hand-dug auger borings were excavated using a 4-inch diameter barrel auger to examine subsurface soils. The field survey found no archeological sites within the southeastern 32.5-acre portion of the Project Site, however corrugated metal and wood stables, paddocks, a possible crossing, two concrete patios, and four transmission line towers were observed within the built environment (**Appendix I-2**).

Records and Literature Search, 160-acre APN 182-010-010, 182-020-020, 182-020-080, and 182-020-010

Natural Investigations requested a California Historical Resources Information System records search for the APE and an area within a two-mile radius of it from the Northwest Information Center at Sonoma State University (NWIC) to determine whether Indigenous or historic cultural resources were previously recorded within the APE and the extent to which the APE was previously surveyed. NWIC completed the records search (MWIC File Number: 24-0419) on September 20, 2024. The records search included the following sources:

- National Register of Historic Places: listed properties
- California Register of Historical Resources: listed resources
- Historic Property Data File for Solano County
- Archaeological Determinations of Eligibility
- Built Environment Resources Directory
- California Inventory of Historical Resources
- California Historical Landmarks
- California Points of Historical Interest
- Historical GLO land plat maps

Natural Investigations reviewed the Mineral Resources Online Data Catalog for the APE and an area within a fifteen-mile radius of it. The database contains the records previously provided in the Mineral Resource Data System (MRDS) of the USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) that originated in the U.S. Bureau of Mines, which is currently part of USGS. The data catalog identified 105 mines in the search area, but did not identify any steatite mines **(Appendix I-4)**.

A Sacred Lands File (SLF) search to identify any sensitive Native American cultural resources in or near the APE was conducted by the Native American Heritage Commission and results were received on March 15, 2024. The SLF search was negative for the presence of culturally sensitive indigenous resources within the APE. The California Historical Resources Information System records search identified sites P-48-000116 and P-48-002044 within the APE. Site P-48-000116 was described as a precontact chert quarry and a historic steatite mine when it was originally recorded in 1980. Site P-48-002044 was described as patios associated with a private residence that did not meet any of the criteria for inclusion on the NRHP when it was originally recorded in 2020. In addition, the records search identified 38 previously recorded sites and eight informal sites in the two-mile record search radius around the APE. The 38 previously recorded sites include a sulphur mine, nine precontact sites (e.g., lithic scatters and bedrock mortars), 23 residential/commercial properties, three roads/railroads, a multicomponent site, and a military site. Natural Investigations concurred with previous determinations that site P-48-002044 did not meet any of the criteria for inclusion on the NRHP in 2020 (Origer and Alshuth 2020).

Field Survey and Subsurface Testing, 160-acre APN 182-010-010, 182-020-020, 182-020-080, and 182-020-010

####, 2024

Natural Investigations archaeologist Dylan Stapleton conducted a cursory survey (i.e., random transects across the APE spaced approximately 30-50 meters apart with more closely spaced transects near and in boundaries of site P-48-000116) of the APE in 2024. The purpose of the survey was to determine if any conditions changed across the APE since the previous surveys of the area and to update the record for site P-48-000116, if necessary. Natural Investigations also conducted subsurface testing at site P-48-000116 on September 25, 2024. Subsurface testing used a 10- or 15-centimeter (cm) diameter auger. A 15 cm auger was used unless the nature of the soils required a 10 cm auger. Testing units were excavated at 20 cm levels to a maximum of 100 cm below the surface (cmbs) or two consecutive sterile levels. Natural Investigations excavated eleven test units at site P-48-000116. The results of these field surveys are included in **Appendix I-4**.

Natural Investigations survey and subsurface testing in 2024 did not identify any evidence of quarrying activity at site P-48-000116 and only identified a few flakes. There is a vein of eroding, poor quality chert at the previously recorded location of quarrying activity, but there is no evidence (e.g., excavation of the vein of chert or identification of large numbers of cores and flakes) to indicate that the site was an Indigenous quarry. A dirt road goes through the area of the chert outcrop and sparse lithic scatters and most of the small number of flakes at the site are located in or adjacent to the road. In addition, the chert is poor quality material (e.g., the chert nodules include a large number of inclusions) and it is possible that the flakes and broken pieces of eroding chert are the result of use of the road and former serpentine mining at the site. Site P-48-000116 does not exhibit any characteristics (e.g., cores, a large number and variety of flake types, and biface blanks) of an Indigenous quarry. The SLF search for the Project was negative and field surveys, database review, and geoarchaeological research, which noted that the time periods associated with the geological formations and soils in the APE pre-date human occupation of the area, all indicate the potential for the presence of intact buried archaeological deposits in the APE is low. Consequently, the results of the cultural resources investigations indicate that construction of the Project would not affect any historic properties and a finding of *No Historic Properties Affected* appears appropriate for the Project pursuant to 36 CFR § 800.4 (d)(1) **(Appendix I-4)**.

SOCIOECONOMIC CONDITIONS – SECTION 3.7 OF THE EA

Regulatory Setting

Executive Order 12898

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, as amended, directs federal agencies to develop an Environmental Justice Strategy that identifies and addresses disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations. The CEQ has oversight responsibility of the federal government's compliance with EO 12898 and NEPA. The CEQ, in consultation with the USEPA and other agencies, has developed guidance to assist federal agencies with their NEPA procedures so that environmental justice concerns are effectively identified and addressed.

The document *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* provides the following direction on how to analyze the impacts of actions on low-income and minority populations:

> *Under NEPA, the identification of a disproportionately high and adverse human health or environmental effect on a low-income population, minority population, or Indian tribe does not preclude a proposed agency action from going forward, nor does it necessarily compel a conclusion that a proposed action is environmentally unsatisfactory. Rather, the identification of such an effect should heighten agency attention to alternatives (including alternative sites), mitigation strategies, monitoring needs, and preferences expressed by the affected community or population. (USEPA, 1998)*

As previously stated, according to guidance from the CEQ (1997) and USEPA (1998), agencies should consider the composition of the affected area, to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by a proposed action and, if so, whether there may be disproportionately high and adverse environmental effects to those populations.

Communities may be considered "minority" under the executive order if one of the following characteristics apply.

- The cumulative percentage of minorities within a census tract is greater than 50 percent (primary method of analysis); or
- The cumulative percentage of minorities within a census tract is less than 50 percent, but the percentage of minorities is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (secondary method of analysis).

According to USEPA, either the county or the state can be used when considering the scope of the "general population." A definition of "meaningfully greater" is not given by the CEQ or USEPA, although the latter has noted that any affected area that has a percentage of minorities above the state's percentage is a potential minority community and any affected area with a minority percentage double that of the state's is a definite minority community under EO 12898.

Communities may be considered "low-income" under the EO if one of the following characteristics applies.

- The median household income for a census tract is below the poverty line (primary method of analysis); or
- Other indications are present that indicate a low-income community is present within the census tract (secondary method of analysis).

In most cases, the primary method of analysis will suffice to determine whether a low-income community exists in the affected environment. However, when a census tract income may be just over the poverty line or where a low-income pocket within the tract appears likely, the secondary method of analysis may be warranted. Other indications of a low-income community under the secondary method of analysis include presence of households whose income is less than or equal to 200% of the poverty level (USEPA, 2022b).

Executive Order 14096

EO 14096, issued in April of 2023, amends and expands certain provisions of EO 12898, and includes the following:

- Provides a broader definition of potentially disadvantaged communities.
- Explicitly expands definition of potentially disadvantaged communities to include persons with a Tribal affiliation and disabled persons;
- Requires Federal Agencies to fulfill environmental justice reporting requirements and prepare strategic plans; and
- Describes additional reporting and notification requirements related to toxic spills.

Environmental Setting

Environmental Justice Screening Tools

The U.S. Federal Government has several tools that can be used to access high-resolution environmental and demographic information for locations in the U.S. and compare their selected locations to the rest of the state, USEPA region, or the nation. These tools can help identify areas with people of color and/or low-income populations, potential environmental quality issues, or a combination of environmental and demographic indicators that are greater than usual. The Environmental Justice Screening and Mapping Tool (version 2.2) and the Climate and Economic Justice Screening Tool (version 1.0) were used to identify potentially disadvantaged communities and other demographics near the Project Site. Using USEPA's Environmental Justice Screening and Mapping Tool (EJScreen, version 2.2), the census tract containing the Project Site was within the 81st percentile for people of color and in the 26th percentile for low-income demographics compared to the rest of the U.S., as shown in **Table 7.** Additional demographic data is listed in **Appendix J**.

Table 7: EJScreen Report - Project Site Census Tract 2501.06 Compared to California and U.S.

Variables	Value	State Average	State Percentile	U.S. Average	U.S. Percentile
People of Color	76%	61%	63	39%	81
Low Income	14%	28%	30	31%	26
Unemployment Rate	6%	7%	53	6%	62
Less than High School Education	6%	16%	35	12%	41
Particulate Matter (µg/m^3)	7.72	8.65	35	8.08	37
Ozone (ppb)	55.7	65.9	15	61.6	11
Air Toxics Cancer Risk[1] (lifetime risk per million)	20	27	3	25	5

Notes: ppb = parts per billion

Source: **Appendix J.**

[1]Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the USEPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding.

EJScreen was used to identify if the Project Site was considered a disadvantaged community. The mapping tool ranks most of the burdens using percentiles. The percentiles show how much burden each tract experiences when compared to other tracts. A community is considered disadvantaged if it is in a census tract that is at or above the threshold for one or more environmental, climate, or other burdens and at or above the threshold for an associated economic burden. If a tract is completely surrounded by disadvantaged communities and is at or above the 50th percentile for low income, it is considered disadvantaged. According to EJScreen, the Project Site is below the thresholds for disadvantaged consideration in all listed aspects (**Appendix J**).

The Climate Economic Justice Screen Tool (version 1) also identified the Project Site census tract as not disadvantaged (Council on Environmental Quality, 2024).

TRANSPORTATION/CIRCULATION – SECTION 3.8 OF THE EA

Regulatory Setting

State and Local

California Department of Transportation (Caltrans)

Caltrans has jurisdiction over State highways. Therefore, Caltrans controls all construction, modification, and maintenance of State highways, such as U.S. 101. Any improvements to these roadways would require Caltrans' approval.

Vallejo General Plan

The Transportation and Circulation Element included in the City of Vallejo General Plan was prepared pursuant to Section 65302(b) of the California Government. Code. The Transportation and Circulation Element addresses the location and extent of existing and planned transportation routes, terminals, and other local public utilities and facilities. The General Plan identifies roadway and transit goals and policies that have been adopted to ensure that the transportation system of the City will have adequate capacity to serve planned growth. These goals and policies are intended to provide a plan and implementation measures for an integrated, multi-modal transportation system that will safely and efficiently meet the transportation needs of all economic and social segments of the City.

Solano Transportation Authority Comprehensive Transportation Plan

The Comprehensive Transportation Plan (CTP) for Solano County identifies, plans, and prioritizes the transportation needs of Solano County through 2040. Solano County's transportation planning agency, the Solano Transportation Authority (STA), as the Transportation Planning and Congestion Management Agency for Solano County, developed the CTP 2040 in collaboration with its many transportation partners and the public. The CTP identifies overall policies as well as specific policies and projects for key plan elements including: arterials, highways, freeways, transit, and alternative modes.

LAND USE – SECTION 3.9 OF THE EA

Regulatory Setting

Federal

Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that federal programs are administered in a matter that is compatible with state and local units of government, and private programs and policies to protect farmland (7 U.S.C. § 4201).

The Natural Resource Conservation Service (NRCS) is responsible for the implementation of the FPPA and categorizes farmland in a number of ways. These categories include prime farmland, farmland of statewide importance, and unique farmland. Prime farmland is considered to have the best possible features to sustain long-term productivity. Farmland of statewide importance includes farmland similar to prime farmland, but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Unique farmland is characterized by inferior soils and, depending on climate, generally needs irrigation.

The NRCS fulfills the directives of the Soil and Water Conservation Act (16 USC § 2001-2009) by identifying significant areas of concern for the protection of national resources. NRCS uses a land evaluation and site assessment system to establish a Farmland Conversion Impact Rating (FCIR) score. The FCIR is completed on form AD-1006. The FCIR form has two components: land evaluation, which rates soil quality up to 100 points, and the site assessment, which measures other factors that affect the property's viability up to 160 points.

The total FCIR score is used as an indicator for the project's sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the allowable level; however, the FPPA does not require federal agencies to alter projects to avoid or minimize farmland conversion. Sites receiving a combined score of less than 160 (out of 260 possible points) do not require further evaluation. For sites with a combined score greater than 160 points, at least two other alternatives are required to be considered and the alternative with the lowest number of points selected unless there are other overriding considerations.

Federal Aviation Regulation

In accordance with 14 CFR 77, which provides requirements, standards, and processes for determining obstructions to air navigation, the Federal Aviation Administration's (FAA's) primary objective is to promote air safety and the efficient use of the navigable airspace. In furthering this mission, the FAA conducts aeronautical studies based on information provided on FAA Form 7460-1, Notice of Proposed Construction or Alteration, by proponents of construction or development in the vicinity of airports. Developers must file Form 7460-1 with the FAA at least 45 days prior to construction if any of the following parameters are met:

- Proposed structure(s) will exceed 200 feet above ground level;
- Proposed structure(s) will be in proximity to an airport and will exceed the slope ratio;
- Proposed structure(s) involves construction of a traverseway (i.e., highway, railroad, waterway, etc.) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b);
- Proposed structure(s) will emit frequencies, and do/does not meet the conditions of the FAA Colocation Policy;
- Proposed structure(s) will be in an instrument approach area and might exceed part 77 Subpart C;
- Proposed structure(s) will be in proximity to a navigation facility and may impact the assurance of navigation signal reception;
- Proposed structure(s) will be on an airport or heliport; or
- Filing has been requested by the FAA (FAA, 2017a).

State and Local

Solano County General Plan

The Solano County General Plan is a comprehensive document that guides land use, development, and conservation in Solano County, California. The land use and agricultural chapters of the Solano County General Plan work together to ensure that agricultural designated parcels are preserved, supported economically, and managed sustainably within the broader framework of land use planning and development in the County.

Chapter 2: Land Use

The land use chapter of the Solano County General Plan guides development decisions by designating areas for residential, commercial, industrial, agricultural, and open space uses, ensuring balanced growth and preserving the county's unique character and natural resources.

Goal LU.G-4: Encourage land use development patterns and circulation and transportation systems that promote health and wellness and minimize adverse effects on agriculture and natural resources, energy consumption, and air quality.

Chapter 3: Agriculture

The agricultural chapter of the Solano County General Plan emphasizes preserving and supporting sustainable agricultural practices, while managing land use to protect agricultural designated parcels from incompatible development.

Goal AR.G-2: Preserve and protect the county's agricultural lands as irreplaceable resources for present and future generations.

Goal AR.G-5: Reduce conflict between agricultural and nonagricultural uses in Agriculture -designated areas.

City of Vallejo General Plan 2040

The Propel Vallejo General Plan 2040 is a comprehensive long-term planning document that outlines the vision, goals, policies, and strategies for the future development and growth of Vallejo, California, up to the year 2040. It serves as a blueprint for guiding land use, transportation, housing, economic development, environmental conservation, and other aspects of community development within the city.

Land Use Element

The General Plan is the city's primary land use regulatory tool and outlines the steps needed to achieve the community's vision for the future. General Plan 2040 includes four chapters that set goals, policies, and actions for seven elements, including land use, which is discussed below.

Goal NBE-1: Beautiful City: Preserve and enhance the natural, historic, and scenic resources that make Vallejo special.

> **Policy NBE-1.1**: Natural Resources. Protect and enhance hillsides, waterways, wetlands, occurrences of special-status species and sensitive natural communities, and aquatic and important wildlife habitat through land use decisions that avoid and mitigate potential environmental impacts on these resources to the extent feasible.
>
> > **Action NBE-1.1F**: Require a biological assessment for new development proposed on sites that are determined to have some potential to contain sensitive biological and wetland resources. The assessment should be conducted by a qualified professional to determine the presence or absence of any sensitive resources, should evaluate potential adverse effects, and should define measures for protecting the resources in compliance with State and federal laws. Detailed surveys are not necessary in locations where past and existing development have eliminated natural habitat and the potential for presence of sensitive biological resources.

Policy NBE-1.2: Sensitive Resources. Ensure that adverse impacts on sensitive biological resources, including special-status species, sensitive natural communities, and wetlands are avoided and mitigated to the greatest extent feasible as development takes place.

Policy NBE-1.5: Scenic Vistas. Protect and improve scenic vistas, including views from Interstate 80 and State Route 37 in Vallejo.

Action NBE-1.5B: Update City regulations for development within view of freeways in Vallejo.

Policy NBE-1.9: Cultural Resources. Protect and preserve archaeological, historic, and other cultural resources.

Action NBE-1.9A: Continue to require that land use activities comply with State requirements and follow best practices to ensure that cultural resources are not impacted and that appropriate agencies and technical experts are involved in the evaluation and protection of resources and sites.

Action NBE-1.9B: Maintain a dialogue with local Native American groups regarding sensitive cultural resources in Vallejo.

Goal NBE-2: A Place Where People Want to Be: Establish Vallejo as an attractive place to live, work, shop, and enjoy time off

Policy NBE-2.3: Inviting, Compatible Design. Promote attractive development that is compatible with surrounding uses.

Action NBE-2.3A: Continue to utilize development approval conditions to achieve compatibility between nearby uses and scale and style of buildings, and to establish limitations on activities that could create potential adverse effects.

Policy NBE-2.4: Regional Retail and Entertainment. Support a thriving mix of regional retail and entertainment uses near Interstate 80.

Action NBE-2.5A: Work with property owners in the Northgate Area to retain and attract businesses that cater both to local residents and regional shoppers, including through circulation and wayfinding improvements.

Policy NBE-2.8: Infill Development. Promote infill development targets vacant and underutilized sites for community-desired and enhancing uses that is compatible with surrounding uses.

Action NBE-2.8A: Identify sites suitable for redevelopment; work with property owners to promote economically feasible and community desired uses that enhance and are compatible with the existing urban fabric.

Goal NBE-3: Pride in Identity: Nurture distinct districts and neighborhoods that contribute to a sense of local pride.

Policy NBE-3.7: Solano360. Achieve the objectives of the Solano360 Specific Plan.

Action NBE-3.7A: Implement Solano360 actions as resources allow.

Policy NBE-3.8: North Gateway. Accelerate investment in the North Gateway area to achieve a mixed-use district that caters to both locals and regional travelers to Napa Valley.

Action NBE-3.8A: Target business attraction strategies for the North Gateway that can take advantage of local commercial needs, as well as the area's location at the entry to the wine country.

Policy NBE-3.13: Neighborhood Character. Preserve the character of existing single-family residential neighborhoods.

Action NBE-3.13A: Continue to carefully review development proposals to preclude substantial increases in density and new land uses in order to minimize the impact to the character of existing single-family neighborhoods.

Goal NBE-5: Hazard Protection: Protect life and property from natural and human-made hazards.

Policy NBE-5.4: Project Location and Design. Prohibit development in any area where it is determined that the potential risk from natural hazards cannot be mitigated to acceptable levels.

Action NBE-5.4A: Continue to require geotechnical studies for land use proposals to determine engineering measures that may be necessary to adequately mitigate any seismic, flooding, sea level rise, landslide, erosion, or related risk.

Action NBE-5.4B: Continue to require drainage and erosion control measures for landslide-prone or geologically hazardous hillside areas to minimize risks to downhill areas.

Goal MTC-1: Regional Transportation Hub: Make Vallejo a regional transportation hub for people and goods.

Policy MTC-1.6: Public Access. Promote public access to open space and trails.

City of Vallejo Title 16: Zoning Code

The City of Vallejo Zoning Ordinance is a set of regulations that govern land use and development within the city. It is designed to implement the policies and goals of the city's General Plan by providing detailed rules for what can be built and how land can be used in different parts of Vallejo. The Zoning Code provides the following description of zoning found on the Project Site. **Figure 3.9-2** of the EA provides a map of the City's zoning for the Project Site and adjacent parcels.

RC Regional Commercial: The RC Zoning District is intended to create and establish regulations for sites that provide general retail, services, and commercial recreation and entertainment for local residents as well as consumers and visitors from the region. Design and development standards will accommodate auto-oriented uses and require buffering and transitions to adjacent residential neighborhoods.

PROS Parks, Recreation, and Open Space: The PROS Zoning District is intended to create and establish regulations for parks, recreation, and open space areas allowing for recreational activities and/or natural resource preservation.

Environmental Setting

Surrounding Land Uses and Zoning

The Project Site is located within and adjacent to the City of Vallejo boundaries in Solano County, California, and is currently undeveloped, except for several unpaved ranch roads. The Project site is zoned and designated Regional Commercial (RC), and Parks, Recreation and Open Space (PROS), in the City of Vallejo Zoning Ordinance. The RC designation supports general retail, services, and commercial recreation and entertainment for local residents as well as consumers and visitors from the wider region. The PROS designation supports parks, recreation areas, and open spaces for recreation and conservation (City of Vallejo, 2021a, City of Vallejo, 2021b). The General Plan designates the Project Site Business and Limited Residential (B/LR) and PROS. The B/LR designation supports high quality employment-based businesses, alongside amenities like restaurants, retail, and residential components if compatible. The General Plan outlines a broad vision and framework for land use in Vallejo, while the Zoning Ordinance provides specific standards to regulate current development, however both are internally consistent (City of Vallejo, 2017a, City of Vallejo 2017b).

The Project Site is bordered by I-80 on the west, Columbus Parkway on the south, a combination of open space and public and semi-public on the east, and agricultural parcels in unincorporated Solano County to the north. The area west of the Project site is adjacent to I-80, which is designated public and semi-public, while the area beyond I-80 is designated residential low density. The area south of the Project Site, beyond Columbus Parkway, is designated regional commercial and residential medium density. The area southwest of the Project Site, currently occupied by the county-owned fairgrounds property, is designated Solano360 (SP-5). The SP-5 land use designation is intended to facilitate the Solano360 Specific Plan and foster the creation of an iconic region serving public entertainment (City of Vallejo, 2017a). Furthermore, the Project is adjacent to the former Northgate Specific Plan, a large-scale mixed-use commercial development project. Due to the buildout of the area, the Northgate Specific Plan has effectively been achieved and the land use designations have been incorporated into the land use map of the General Plan (City of Vallejo, 2017a).

The Project Site is within the I-80/SR 37 Gateway Area, near key regional areas such as Gateway Plaza, Six Flags Discovery Kingdom, and the Solano County Fairgrounds. The General Plan aims to support these attractions with new commercial and residential development, strengthening the sense of place at this important regional destination in Vallejo. Development in this area aims to bring more patrons to the planned restaurant, retail, and entertainment uses on the fairgrounds site, supporting the vision described in the Solano360 Specific Plan.

Regional access to the Project Site is provided by I-80, which runs in a north-south direction adjacent to the site's western boundary, and Highway 37 that terminates at a junction with I-80 approximately 0.15 miles west of the Project Site. Local access to the Project Site is currently provided through an existing driveway off Columbus Parkway on the neighboring property. The eastern portion of the property, though which access roads will be built, supports a horse boarding facility characterized by an assemblage of wooden structures and piles of debris, concrete and wood scattered throughout the site. Old concrete slabs indicate the presence of former buildings onsite. The western portion of the property consists of open space and supports grazing.

The Napa County Airport is located approximately six miles northwest of the Project Site. The Project Site is located outside of the Airport Safety Zone for this airport (Napa County Airport Land Use Commission, 1991). The New Horizons Montessori School is located 0.25 miles southwest of the Project site, beyond the I-80 and Highway 37 junction. The Solano Community College Vallejo Center is located 0.7 miles east of the Project Site. There are no churches or libraries located within one mile of the Project site.

Agriculture

The U.S. Department of Agriculture (USDA) conducts a state-by-state census of agriculture every five years. The National Agriculture Statistical Service collects census data from a list of all known potential agriculture operators. The census reports on various statistics relating to crop yields, farm acreage, and farm economics. According to the 2022 Census of Agriculture, a total of 339,476 acres in Solano County are used for farming purposes (USDA, 2022).

The State of California developed the Farmland Mapping and Monitoring Program (FMMP) to provide data to decision makers for use in planning for the present and future of California's agricultural land resources. Prime farmland is a designation applied to lands with the best combination of physical and chemical features able to sustain long-term agriculture. Farmland of Statewide Importance is a designation applied to lands that are similar to Prime Farmland but with minor shortcomings, such as large slopes or the diminished ability to store soil moisture. Unique farmland is comprised of lesser quality soils used for the production of the State's leading agricultural crops (DOC, 2024).

PUBLIC SERVICES AND UTILITIES– SECTION 3.10 OF THE EA

Regulatory Setting

Federal

Safe Drinking Water Act and Clean Water Act

See **Water Resources – Section 3.3 of the EA** above.

Public Law 280

Public Law 280 was enacted in 1953 to grant certain states criminal jurisdiction over Indians on reservations in addition to permitting civil litigation under tribal or federal court jurisdiction to be handled by state courts. The states mandated to assume criminal and civil jurisdiction over federal Indian lands are Alaska, California, Minnesota, Nebraska, Oregon, and Wisconsin, although certain tribal lands are exempt, including Metlakatla Indian Community on the Annette Island Reserve, Red Lake Reservation, and Warm Springs Reservation. In addition to these states, other states elected to assume full or partial responsibility, including Arizona, Florida, Idaho, Iowa, Montana, Nevada, North Dakota and Utah. The federal government relinquished all special criminal jurisdictions over Indian offenders and victims in these states. However, Public Law 280 does not grant states the following regulatory powers over lands held in federal trust or tribes:

- Federally guaranteed fishing, tribal hunting, and trapping rights;
- Fundamental tribal governmental functions, such as domestics relations and tribal enrollment; and
- Authority to impose state taxes.

Due to the one-sided process that imposed state jurisdiction on tribes and the complete failure to recognize tribal sovereignty and tribal self-determination, Public Law 280 was opposed by Indian Nations from its enactment. Subsequent acts of Congress, court decisions, and state actions to retrocede (or give back) jurisdiction back to the federal government have mitigated some of the effects of the 1953 law and strengthened tribes' jurisdiction over civil and criminal matters on their reservations.

State and Local

California Integrated Waste Management Act (Assembly Bill 939)

In 1989, the State of California enacted AB 939, the California Integrated Waste Management Act, which requires jurisdictions to conduct a solid waste disposal needs assessment that estimates the disposal capacity needed to accommodate projected solid waste generated within the jurisdiction and to identify a minimum of 15 years of permitted disposal capacity. All local jurisdictions are required to divert 50 percent of their total waste stream from landfill disposal.

California's Short-Lived Climate Pollutant Reduction Strategy (Senate Bill 1383)

SB 1383 requires counties to take the lead collaborating with the jurisdictions located within the county in planning for the necessary organic waste recycling and food recovery capacity needed to divert organic waste from landfills into recycling activities and food recovery organizations. It requires businesses to divert organic waste from landfills and recover edible food. The State of California has a goal to redirect 20% of edible food currently thrown away to people in need (Cal Recycle, 2024).

Mandatory Commercial Organics Recycling (Assembly Bill 1826)

AB 1826 Chesbro (Chapter 727, Statutes of 104) requires businesses to recycle their organic waste depending on the amount of waste they generate per week. Local jurisdictions across the State of California are required to implement an organic waste recycling program to divert organic waste generated by businesses (Cal Recycle, 2014).

City of Vallejo 2020 Urban Water Management Plan (UWMP)

In 1983, the State of California created the Urban Water Management Planning Act, which requires urban water suppliers serving over 3,000 customers or supplying at least 3,000 acre-feet of water annually to:

1. prepare/adopt an urban water management plan every five years;
2. demonstrate water supply reliability in a normal, single dry, and drought years lasting at least five years over a twenty-year planning horizon;
3. prepare a drought risk assessment and water shortage contingency plan; and
4. Since July 2022, prepare an annual water supply and demand assessment.

The UWMP is the legal and technical water management foundation for urban water suppliers in California which gathers, characterizes, and synthesizes water-related information from sources into a plan with local, regional, and statewide practical utility. The City of Vallejo has numerous water supply sources that are derived from water rights and contracts and provide significant annual volumes of water that are used to meet contractual obligations and end-user demands. The water supplies are derived from four surface water sources including:

- Sacramento River watershed, which includes appropriative water right license 7848 and a contract with Solano County Water Agency for State Water Project water supplies
- Solano Project from Putah Creek watershed (includes Lake Berryessa)
- Wild Horse Creek watershed through Lakes Marigan and Frey, and the Green Valley Diversion
- Upper Suisun Creek watershed through Lake Curry.

The water service area boundary contains two water systems including the Vallejo City System/Vallejo City Service Area which delivers supplies from Fleming Hill water treatment plant (WTP) and the Vallejo Lakes

System/Vallejo Lakes Service Area which delivers water from the Green Valley WTP. In addition, the City supplies water to Travis Air Force Base, American Canyon, and other areas both inside and outside the City's service area boundary. The city does not use recycled water in its service area nor does the city have any groundwater supply sources.

The City of Vallejo receives its treated water from the Fleming Hill WTP. This WTP is a conventional 42 million gallons per day (mgd) treatment plant with ozonation (pre and intermediate). The plant receives and treats water from the Solano Project (Lake Berryessa) and from the Sacramento River Delta through the North Bay Aqueduct.

Water Demands

A portion of the Project Site was assumed to be developed for business/limited residential. Projected population and water demands included planned and assumed developments including the Solano360 Specific Plan which includes 50 housing units and a 330,000 square foot entertainment/mixed use area. With population growth (currently 125,000 to over 150,000 people), the water service area and water demand are expected to increase in the City of Vallejo through the UWMP's planning horizon year 2045. "The city currently produces just over 20,000 acre-feet of treated water annually to meet this demand, with additional raw water services to City and wholesale customers that can demand nearly 6,000 acre-feet per year (though the actual need varies each year)" (City of Vallejo, 2021). In anticipation of future growth, the city is expected to increase water supply demand by 3,000 to 4,000 acre-feet by 2045.

Forecasted water demands for the city to year 2045 are shown in **Table 8** below. These demand forecasts are for expected water needs under normal hydrologic conditions. The wholesale raw demand in 2025 is estimated to be 6,003 AFY and remain the same in 2045, with no growth projected for raw water connections. Is estimated that a 5 percent increase would be added to the total estimated demand for the forecasted drought risk assessment.

The 2020 UWMP also includes a projected disadvantaged community water use calculation per California Health and Safety Code Section 50079.5. A lower income household has an income below 80 percent of the area's median income, adjusted for family size. The annual median income was derived from the 2019 US Census Bureau and was approximately 71,300 dollars for the city. Therefore, 80 percent would be approximately 57,000 dollars per year. For the purpose of estimating future water needs, 37 percent of the total City single-family and multi-family demands from the table above are presumed to represent disadvantaged households. Using these numbers to forecast the water use for the entire City results in an estimate of 12,368 AFY (4,576 AFY forecasted) in 2025 to 16,429 AFY (6,079 AFY forecasted) in 2045.

Table 8: Forecasted Water Demands (AFY)

Service Area	2025	2030	2035	2040	2045
Treated Water Service					
Total City/Unincorporated	21,369	22,406	23,579	25,132	25,122
Total Lakes	740	744	748	752	766
Total Treated Water Service	22,108	23,150	24,328	25,885	25,889
Raw Water Service					
Total Wholesale Raw	6,003	6,003	6,003	6,003	6,003
Grand Total (Treated and Raw)	**28,111**	**29,153**	**30,311**	**31,888**	**31,892**

Source: City of Vallejo, 2021

Table 9 shows the current, normal, and single dry year supplies and demands.

Table 9: Normal and Single Dry Year Water Supply and Demand (AFY)

Year	Current	2025	2030	2035	2040	2045
Normal Year						
Supply	35,695	35,820	35,823	35,825	38,778	38,780
Demand	26,824	28,111	29,153	30,331	31,888	31,892
Difference	8,871	7,709	6,670	5,494	6,890	6,888
Single Dry Year						
Supply	30,610	31,585	31,588	31,590	33,093	33,095
Demand	28,236	29,113	30,207	31,443	33,079	33,083
Difference	2,374	2,472	1,381	147	14	12

Source: City of Vallejo, 2021

Table 10 shows the multi-year drought supply totals.

Table 10: Vallejo Municipal System Water Supply Management Multi-Year Drought Supply (AF)

Year	Supply
2021	35,176
2022	32,592
2023	28,941
2024	29,078
2025	29,718

Source: City of Vallejo, 2021

When evaluating on an annual basis, the city is capable of meeting the forecasted water demands throughout the Vallejo Municipal Service Area in normal years through 2045. During single-dry and multiple-dry years, depending on how the city manages its supply, demands could come close to exhausting supplies, triggering a water shortage contingency plan (WSCP). Projected predictions and conditions are evaluated at the beginning of each year.

Water Shortage Contingency Plan

The WSCP allows the City to reduce water demands on the water system in times of shortage or catastrophic outage conditions. Measures that are put into place include typical dry condition water management actions including “mandatory outdoor irrigation during evening, nights, and early mornings imbedded into six water shortage categories (up to 10%, 11-20%, 21-30%, 30-40%, 40-50%, and over 50%)” (City of Vallejo, 2021). If a catastrophic water outage in the City were to occur, water demands would be limited to use for health and safety purposes only. The combination of the WSCP with the City’s active water management of its supply portfolio provides an additional buffer against unpredictable water conditions.

The City of Vallejo’s surface water portfolio, active management of its water supply portfolio, and its WSCP provide the city with a stable and reliable water service to meet the current and 2045 projected water demands with supply reliability encompassing normal, single dry, and five consecutive dry year scenarios.

City of Vallejo Water Master Plan 2015

The City of Vallejo Water Master Plan (WMP) is an update of the City's 1996 plan. The WMP includes water demand projections by pressure zone for the city service area projected to the year 2035. It also includes an update to the water system hydraulic model, evaluation of the feasibility of constructing a water transmission main line connecting to the Fleming Hill WTP Clearwell to the Mare Island storage tanks, identifies infrastructure improvements, and produces and updated capital improvement program to support short and long-range capital improvement requirements (City of Vallejo, 2015).

This WMP focuses on the City of Vallejo Water System and does not include the City of Vallejo Lakes System. The Fleming Hill WTP treats the surface water used to service the Vallejo Water System service area and supplies water to all the pressure zones. Details regarding the Fleming Hill WTP are discussed above under the Urban Water Management Plan.

Infrastructure

The City of Vallejo's potable water system consists of a network of pumps, eight main pressure zones (with multiple subzones) and three hydropneumatic zones, supply connections and reservoirs/tanks. The City maintains over 440 miles of pipelines, 17 active pumping stations, 23 storage facilities, and 16 pressure regulating stations to support the delivery of water throughout the City.

The distribution system pipelines range in size from 1-inch to 42-inch in diameter. The pipes are predominantly cast iron and ductile iron pipe.

The Project Site is located in Pressure Zone 292, with storage reservoir R-05 (Columbus Parkway Tank) adjacent to the eastern boundary of the Project Site. The 292 Pressure Zone has two subzones, the Trans Vallejo, which gets its water supply from Fleming Hill Clearwell and Skyview/Columbus Reservoirs, and Glen Cove, which gets its water supply from Glen Cove Reservoir. Both subzones serve elevations of 40 to 160 feet with a static pressure range of 57 to 110 psi.

The water system includes 23 storage reservoirs, ranging in size from 0.1 million gallons (MG) to 37.4 MG with a total storage capacity of 86.6 MG. These reservoirs provide operational storage for daily demands as well as emergency and fire flow storage. The Columbus Parkway reservoir has a storage volume of 6 MG, the Glen Cove reservoir has a storage volume of 1.5 MG, and the Skyview reservoir has a storage volume of 6 MG. Currently there are no hydropneumatics tanks within Pressure Zone 292.

The pump stations vary in size from 10 to 250 horsepower and 100 to 5,000 gallons per minute (gpm) design capacities. The majority of the pumps are electric, but those servicing Pressure Zone 292 are gas driven. The pump stations that service to and from Pressure Zone 292 have design capacities from 400 to 5,000 gpm.

The water system uses 15 pressure regulating valves (PRVs) and one flow control valve (FCV) to transfer water between pressure zones. There are four PRVs within Pressure Zone 292, two are normally closed and two are normally open (City of Vallejo, 2015).

Vallejo Flood and Wastewater District Sanitary Sewer Collection Plan

The Vallejo Flood and Wastewater District (VFWD) was established in 1952 by the State of California as an independent special district responsible for maintaining separate storm drainage and wastewater collection and treatment systems within its service area. The VFWD serves the City of Vallejo and other adjacent unincorporated areas (VFWD, 2023).

This sanitary sewer collection plan's purpose is to:

- Update the VFWD's hydraulic model;
- Implement a 2-year flow monitoring program;
- Develop a rehabilitation and replacement program;
- Identify existing and future capacity deficiencies in the collection system; and
- Develop and prioritize a capital improvement plan to address capacity deficiencies.

The VFWD services approximately 32,787 acres of developed land, with 4,765 acres of that land designated as commercial, and 12,557 acres of that land designated as open space. The Project Site is designated commercial and open space.

Current Infrastructure

The collection system consists of over 370 miles of sanitary sewer mains, with diameters ranging from 4-inches to 60-inches). The system also has 36 sanitary sewer pump stations; 6.4 miles of pressurized force mains, with diameters ranging from 3-inches to 30-inches; and two equalization storage facilities, with 11 MG capacities. The Ryder Street Wastewater Treatment Plant treats all wastewater flows generated within the collection system.

Future Development

Currently, the Project Site is flanked by two of the seven specific plan areas that will be developed based off the City of Vallejo's General Plan 2040. These consist of the Solano360 specific plan, located to the west of the Project Site, which has 149.1 vacant acres to be developed by buildout contributing to additional flow, and the Northgate specific plan, which will not contribute to additional flow at buildout, since it is not vacant. Only the Solano360 specific plan will contribute to additional flow.

Additionally, the VFWD considered the development of additional dwelling units (ADUs) to the land. ADUs are attached or detached residential dwelling units on the same lot as an existing dwelling unit zoned for single-family or multi-family use. It was assumed that the number of ADUs throughout the collection system would increase by 20 percent every year over the next five years and then increase by five percent every year until the year 2040, with a total number of 2,778 expected by 2040.

The master plan includes several improvements to wastewater mains, pump stations, and storage tanks for rehabilitation, replacement, or capacity increases to accommodate future buildout. VFWD requires prospective project applicants to contract with VFWD for a study to demonstrate that it is possible to provide sewer service to a project and prove that the system has capacity to handle the increase in flows. The projected wastewater flows for existing and buildout is included in **Table 11** below.

Table 11: Projected Wastewater Flow

Period	ADWF (mgd)[1]	PWWF (mgd)[2]
Existing	7.86	86.78
Buildout	8.46	90.91[3]

Notes: 1) Average Dry Weather Flow; 2) Peak Wet Weather Flow; 3) Model simulated, system wide peak hourly flow for the entire system.

Source: VFWD, 2023.

Solano Emergency Medical Services Cooperative

The Solano Emergency Medical Services Cooperative (SEMSC) is a Joint Powers Authority pursuant to Government Code §6500. The Cooperative is comprised of all the cities of Solano County, except the City of Vacaville. It also includes all the fire districts in the unincorporated area of the county. The SEMSC was designated by the Solano County Board of Supervisors as the local EMS agency for Solano County as allowed in Health and Safety Code Division 2.5 §1797.200. The SEMSC has the ability to select a provider for emergency ambulance services (Solano County, 2024f). Accordingly, SEMSC has entered into an agreement with Medic Ambulance Service (Medic) and participating member cities, including the City of Vallejo, wherein Medic provides advanced life support backup services as needed on a city-by-city basis (SEMSC, 2010).

Environmental Setting

Water Supply

Water Supply Infrastructure

The Project Site is currently within the 292 Trans Vallejo pressure zone of the City's Municipal Water System (Vallejo MWS; City of Vallejo, 2015) and the horse boarding facility currently obtains water from the City. As described in **Sections 1.4**, an existing 24-inch transmission main crosses the Project Site from I-80 to the City's 6-million-gallon Columbus Parkway Tank adjacent to the eastern boundary of the Project Site and another 24-inch transmission main crosses the southeastern portion of the Project Site from the Columbus Parkway Tank to a 24-inch transition main that runs along Columbus Parkway. These 24-inch lines are associated with the City's 292 Pressure Zone that is served by the Fleming Hill Water Treatment Plant and Clearwell and Trans Vallejo Pump Station, as well as the Columbus Parkway and Skyview reservoirs. Additionally, a 16-inch transmission main associated with the City's 400 Pressure Zone also runs along Columbus Parkway. Please refer to **Appendix E** and **Appendix B** for additional information regarding water supply infrastructure.

Water Supply Sources and Demand

Water supply for Vallejo MWS is derived from numerous surface water sources through water rights and contracts. Vallejo MWS does not have any groundwater supply sources and has no present intent to develop groundwater supplies in the foreseeable future. Vallejo MWS has access to up to approximately 35,700 acre-feet of raw water during a normal year. During dry years, between approximately 29,000 and 30,600 acre-feet of water is available depending on whether it is a single or multi-year drought. In 2020, total water demand was approximately 13,800 acre-feet. The City of Vallejo 2020 Urban Water Management Plan (UWMP) estimates that the total normal year water demand for the Vallejo MWS is approximately 31,900 acre-feet in 2045, with estimated water demands increasing to approximately 33,000 acre-feet during single and multiple dry years (City of Vallejo, 2021). The UWMP concluded that, through active management, the City has reliable annual water supplies available for its service area through 2045 during normal conditions, though it will need to actively manage these supplies to reliably meet month-by-month customer demands during multi-dry periods. Under single-dry and multiple dry year conditions, supplies are projected to just meet unconstrained demands when assessed on an annual basis. The City's Water Shortage Contingency Plan (WSCP) would be triggered to address any shortcomings identified in a particular year (City of Vallejo, 2021). Please refer to **Appendix E** and **Appendix B** for additional information regarding water supply sources and demand.

The City of Vallejo does not currently use recycled water supplies in its service area because the City's WWTP is not currently equipped to provide the necessary tertiary treatment to meet Title 22 standards (City of Vallejo, 2021). However, the City has prepared a Recycled Water Facilities Plan (RWFP) that identified numerous potential recycled water users within the City that have an estimated total recycled water demand of 2,408

acre-feet per year (AFY; VFWD, 2018). **Figure 2.1-5** of the EA shows the potential recycled water users identified in the RWFP and their respective recycled water demands. For example, Blue Rock Springs Golf Club, located less than two miles southeast of the Project Site (identified with a "1" on **Figure 2.1-5** of the EA) was identified as one of the top potential recycled water users with a demand potential of approximately 500 AFY.

Wastewater Treatment

The Project Site is within the service area of the Vallejo Flood and Wastewater District (VFWD). Wastewater generated within the VFWD is conveyed through various gravity sewers, pump stations, and force mains to the Vallejo WWTP, which has a dry weather capacity of 15.5 million gallons per day (mgd) and a wet weather capacity of 60 mgd (**Appendix B**). **Table 12** summarizes the projected wastewater flows included in the VFWD Sanitary Sewer Collection System Master Plan (VFWD, 2023). The VFWD currently has a 3.2-million-gallon storage tank located at Sears Point Pump Station. This tank is used during peak wet weather flow (PWWF) conditions to contain peak flows, the stored flows in the tank are returned to the pump station when flows have subsided and conveyed to the WWTP for treatment. The VFWD Sanitary Sewer Collection System Master Plan identifies several improvements to wastewater mains, pump stations, and storage tanks for rehabilitation, replacement, or capacity increases to accommodate peak wet weather flows of future buildout in subbasins where inflow and infiltration are excessive. The Sewer Master Plan acknowledges that while future flows do not create the need for additional improvements VFWD is working with developments to contribute to mitigation funding. VFWD requires prospective project applicants to contract with VFWD for a study to demonstrate that it is possible to provide sewer service to a project and prove that the system has capacity to handle the increase in flows. Please refer to **Appendix E** and **Appendix B** for additional information regarding wastewater treatment infrastructure and capacity.

Table 12: Projected Wastewater Flow at VFWD WWTP

Period	ADWF (mgd)	PWWF (mgd)
Existing City Flows	7.86	86.78[1]
Future City Flows	8.46	90.91[1]

Notes: ADWF = Average Dry Weather Flow; PWWF = Peak Wet Weather Flow; mgd = millions of gallons per day; 1) Model simulated, system wide peak hourly flow for the entire system.
Source: VFWD, 2023

Solid Waste

The Solano County Department of Resource Management, Environmental Health Services Division, has a Water Protection and Waste Management Program which implements County programs in liquid waste, water systems, solid waste disposal, wells, and land use and provides assistance in planning and implementation of the Solid Waste Management Program amongst others (Solano County, 2024b). The Environmental Health and Safety Division is the local enforcement agency overseeing the sanitary disposal of solid waste. They issue permits, conduct inspections, monitor, and enforce activities to assure proper storage, collection, transportation, and disposal of solid waste consistent with local and State regulations (Solano County, 2024c).

The City of Vallejo Public Works Department manages recycling and solid waste contract services. Recology Vallejo provides commercial solid waste collection services within the city limits of Vallejo and in the surrounding Solano County area (City of Vallejo, 2024c). Vallejo Garbage Services offers comprehensive commercial recycling services. Waste from the City is brought to the Devlin Road Recycling and Transfer Facility, then loaded into trucks and sent to Potrero Hills Landfill in Suisun, Solano County. The Devlin Road Recycling and

Transfer Station is approximately 5.20 miles northwest of the Project Site. The Potrero Hills Landfill is located approximately 13.70 miles northeast of the Project Site. It is permitted to accept up to 4,330 tons per day on peak days, with a maximum permit capacity of 83,100,000 cubic yards (CalRecycle, 2019). Portero Hills Landfill is permitted to accept several different types of waste: tires, sludge (biosolids), mixed municipal, industrial, construction/demolition, ash, and agricultural. The cease operation date for the landfill is February 14, 2048 (CalRecycle, 2019).

Electricity, Natural Gas, and Telecommunications

As described in Section 2.1.9, Pacific Gas and Electric (PG&E) is the primary electric and natural gas provider in northern and central California and serves 16 million people within a 70,000-square-mile service area. There are 106,681 circuit miles of electric distribution lines, 18,466 miles of circuit interconnected transmission lines, 42,141 miles of natural gas distribution pipelines, and 6,438 miles of transmission pipelines (PG&E, 2024c). In 2023, electricity generation and purchases were from 100% greenhouse gas-free sources: 53% nuclear, 34% eligible-renewable resources, and 13% hydroelectric (PG&E, 2024d).

As of April 2024, PG&E has more than 260 renewables portfolio standard-eligible power purchase agreements totaling more than 6,000 megawatts (MW), they also own 430 MW of eligible-renewable generation, which includes 277 MW of small hydroelectric, and 13 solar generation plants, which generate up to 153 MW of clean power. As of March 2024, PG&E has brought online more than 2,100 MW of new incremental battery storage capacity, with an additional 772 MW planned later in 2024, and 687.5 MW planned for 2025. Currently, PG&E has 3.5 gigawatts of total battery energy storage under contract (PG&E, 2024d).

There are transmission lines and associated easements for PG&E that traverse the Project Site north to south; one along the western portion of the project site, parallel to Interstate 80, this area includes 16.12 acres encumbered, and an additional easement area of 6 acres, and another cutting through the northeastern corner of the site. There is a gas transmission line that crosses I-80 and is to the west of the Project Site, this natural gas line is 7.19 miles long, another line runs east of the Project Site and goes past Hiddenbrooke Park, this natural gas line is 2.40 miles long (PHMSA, 2024). The Tribe would contract and coordinate with PG&E to provide services to the Project Site and determine the best connection site.

There are many private companies that provide telephone, internet, and cable services to properties within the vicinity of the Project Site. Companies such as Xfinity, Verizon, T-Mobile, AT&T, Direct Tv, VIP Fiber, Viasat, Earthlink, Hughesnet, Starlink, Unwired, and Always On offer a host of telecommunication services in the region.

Law Enforcement

The Vallejo Police Department provides law enforcement services within the City, including to the Project Site, and the Solano County Sheriff's Office (SCSO) provides law enforcement services to unincorporated areas of the County directly to the east and north. The Vallejo Police Department is located approximately 3.18 miles southwest of the Project Site, and the SCSO is located approximately 11.74 miles northeast of the Project Site in the City of Fairfield.

As of February 2024, the Vallejo Police Department has 73 sworn in staff and 33 working patrol officers. In 2023, there were 163,734 calls received (911 and non-emergency), with 52,236 calls for service (Vallejo Police, 2023). Calls for services include crime reports, felony arrests, officer-initiated incidents, information reports, misdemeanor arrests, traffic stops, use of force incidents, vehicle/pedestrian checks, officer involved shootings, vehicle pursuits, firearm arrests and assaults on officers. Crime statistics in 2022 vs. 2023 had decreased in

murder, rape, aggravated assault, residential burglary, stolen vehicles, arson, domestic violence, violent crime, and overall crime. Crime statistics in 2022 vs. 2023 had increased in robbery, commercial burglary, auto larceny, larceny, shootings, and property crime. Traffic fatal collisions had also decreased from 24 to 8 in 2022 vs. 2023 (Vallejo Police, 2024). In 2022, average response time for a priority one call was 11 minutes and 18 seconds, which is about 5 minutes longer than the agency's target response time of 6 minutes. Priority two calls had an average response time of over two hours, despite the agency's target response time of 11 minutes (Crime and Consequences, 2023). In July 2023, Vallejo, California declared a state of emergency over police shortages. The Vallejo Police Department is now working with the SCSO and the California Highway Patrol to help supplement its staff (Police1, 2024).

Fire Protection

The City of Vallejo is served by the Vallejo Fire Department. The fire department consists of 108 employees (administration, suppression, training, and prevention divisions). The department responded to a total of 1,020 fire calls and 11,956 EMS calls in 2023 (**Appendix A**). The Fire suppression division consists of 99 firefighters, firefighter paramedics, engineers, captains, and battalion chiefs. There are six different stations throughout the City of Vallejo, working three shifts to ensure coverage for 24 hours a day, 7 days a week (City of Vallejo, 2024). The closest fire station is Station #27, which is immediately east of the Project Site (approximately 0.20 miles). The Vallejo Fire Department is a non-transport, advanced life support provider and staffs all of its departments with a minimum of one licensed paramedic.

The BIA is responsible for wildland fire management on federal trust land. Under the *California Master Cooperative Wildland Fire Management and Stafford Act Response Agreement* signed in 2007, federal agencies and the California Department of Forestry and Fire Protection (now CAL FIRE) agreed to improve efficiency by facilitating the coordination and exchange of personnel, equipment, supplies, services, and funds for wildfires in addition to improving coordination regarding other incidents. Numerous federal agencies signed this agreement, including the BIA. Under this agreement, agencies can enter into agreements of mutual aid and contract for wildfire related services with each other (BIA et al., 2007). CAL FIRE provides fire protection services to State Responsibility Areas. The Project Site is not located in one of these areas, it is located in a local responsibility area (CAL FIRE, 2024). The nearest State Responsibility Area in which CAL FIRE would provide the primary emergency response is located approximately 0.70 miles north of the Project Site. The regional CalFire Headquarters is located in Santa Rosa approximately 45 miles from the Project Site. Cal Fire also operates facilities in Gordon Valley (approximately 20 miles away) and has the capabilities of dispatching from the Napa Airport approximately 9 miles away .

The nearest hospital center to the Project Site is Kaiser Permanente Vallejo Medical Center, located at 975 Sereno Drive, Vallejo, CA, about 1.8 miles southwest of the Project Site. This hospital provides walk-in care, urgent care, and emergency services (City of Vallejo, 2024b).

Emergency Medical Services

The Solano Emergency Medical Services Cooperative (SEMSC) is the emergency medical services agency that services the County of Solano. The SEMSC comprises all of the cities in Solano County, except the City of Vacaville, and all of the fire districts in the unincorporated area of the county (Solano County, 2008). The SEMSC is responsible for selecting a provider for emergency ambulatory services. Currently, Medic Ambulance assists the fire department and is the exclusive 911 ambulance provider for Solano County. They receive approximately 130,000 requests for service each year (Solano County, 2011; Solano County, 2024). The nearest hospital center

to the Project Site is Kaiser Permanente Vallejo Medical Center, located approximately 1.8 miles southwest of the Project Site, which provides walk-in care, urgent care, and emergency services (City of Vallejo, 2024b).

Public Schools

The Project Site is located within the Vallejo City Unified School District (VCUSD). VCUSD currently provides educational services through seven child development centers/preschools, one adult school, 15 elementary and K-8 schools, one middle school, and three high schools (VCUSD, 2024). The school district had a total enrollment of 12,215 students in 2022-2023 (**Appendix A**). The nearest public school to the Project Site is approximately 1.45 miles northwest, Solano Widenmann Leadership Academy, while the nearest schools are New Horizons Montessori School (0.21 miles west) and Solano Community College Vallejo (0.63 miles southeast).

Parks and Recreation

Solano County has four parks, including Beldens Landing, Lake Solano, Lynch Canyon, and Sandy Beach. The parks are located in each of the four corners of the County (Solano County, 2024d), with the closest being Lynch Canyon which is located approximately 2.60 miles northeast of the Project Site. There are 25 parks in the City of Vallejo (Solano County, 2024e). The closest park area to the Project Site is City-operated Dan Foley Park, which is located approximately 0.83 miles to the southwest of the Project Site, followed by Blue Rock Springs, which is located approximately 1.30 miles to the southeast of the Project Site.

NOISE – SECTION 3.11 OF THE EA

Regulatory Setting

Federal

Federal Interagency Committee on Noise

The Federal Interagency Committee on Noise (FICON) provides guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}.

Table 13: Significance of Changes in Noise Exposure

Ambient Noise Level Without Project, L_{dn}	Increase Required for Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON)

Federal Transit Administration

The Federal Transit Administration (FTA) establishes quantified vibration level limits and provides guidance for assessing and mitigating impacts associated with transit projects in its Transit Noise and Vibration Impact Assessment Guidelines, 2006.

Table 14: Vibration Levels for Various Construction Equipment

Type of Equipment	Peak Particle Velocity at 25 feet (inches/second)	Peak Particle Velocity at 50 feet (inches/second)	Peak Particle Velocity at 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/Drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/Roller	0.210 (Less than 0.20 at 26 feet)	0.074	0.026

Source: **Appendix L**

State and Local

Caltrans

Caltrans establishes procedures for evaluating and mitigating traffic noise impacts for transportation projects using Federal Highway Administration (FHWA) Noise Abatement Criteria. Caltrans defines a significant increase due to noise as an increase of 12 dBA over existing ambient noise levels.

City of Vallejo General Plan

The following policies relating to noise and vibration from the City of Vallejo General Plan 2040 may be applicable to the project:

Policy CP-1.14: Healthy Economic Development. No use shall be operated in a manner that produces vibrations discernible without instruments at any point on the property line of the lot on which the use is located.

> **Action CP-1.14A:** Consider developing and adopting a "healthy development checklist" to evaluate potential new development under appropriate criteria, which might include exposure to harmful levels of air pollution, effects on the noise environment, relationship to the active transportation network and the safety of that network, and effects on social cohesion.

Policy NBE-5.13: Noise Control. Ensure that noise does not affect quality of life in the community.

> **Action NBE-5.13A:** Continue to require that new noise-producing uses are located sufficiently far away from noise-sensitive receptors and/or include adequate noise mitigation, such as screening, barriers, sound enclosures, noise insulation, and/or restrictions on hours of operation.
>
> **Action NBE-5.13B:** Update City regulations to require that parking, loading, and shipping facilities and all associated mechanical equipment be located and designed to minimize potential noise and vibration impacts on residential neighborhoods.
>
> **Action NBE-5.13C:** Update City regulations to restrict the allowable hours to between 7 AM and 7 PM on weekdays for construction, demolition, maintenance, and loading/unloading activities that may impact noise-sensitive land uses.

Action NBE-5.13D: Require proponents of mixed-use projects to notify potential residents that they may be affected by noise from adjacent/nearby commercial, retail, entertainment, and/or circulation components of the project.

Policy NBE-5.14: Vibration Control. Ensure that vibration does not affect quality of life in the community.

Action NBE-5.14A: Update City regulations to establish quantified vibration level limits similar to commonly used guidelines found in the Federal Transit Administration document "Transit Noise and Vibration Impact Assessment" (2006).

Policy NBE-5.15: Noise Compatibility Standards. Apply the General Plan noise and land use compatibility standards to all new residential, commercial, and mixed-use development and redevelopment.

Action NBE-5.15A: For new single-family residential projects, use a standard of 60 Ldn for exterior noise in private use areas, and require appropriate impact mitigation.

Action NBE-5.15B: For new multi-family residential projects, use a standard of 65 Ldn in outdoor areas, excluding balconies, and require appropriate impact mitigation.

Action NBE-5.15C: For new mixed-use projects that include a residential component, use a standard of 65 Ldn in outdoor areas, excluding balconies, and require the design to minimize commercial noise intrusion into residential areas, including by separating residential areas from noise-generating sources such as mechanical equipment, entertainment facilities, gathering places, loading bays, parking lots, driveways, and trash enclosures to the extent reasonably feasible.

Action NBE-5.15D: Require maximum interior noise levels at 45 Ldn in all new residential units, and require appropriate impact mitigation.

Action NBE-5.15E: When approving new development, limit project-related noise increases to the following for permanent stationary and transportation-related noise sources:

- No more than 10 dB in non-residential areas;
- No more than 5 dB in residential areas where the with-project noise level is less than the maximum "normally acceptable" level in the Noise and Land Use Compatibility figure; and
- No more than 3 dB where the with-project noise level exceeds the "normally acceptable" level in Noise and Land Use Compatibility figure.

City of Vallejo Municipal Code

The following ordinances from the City of Vallejo Municipal Code for noise and vibration may be applicable to the project:

16.502.08 – Vibration

No use shall be operated in a manner that produces vibrations discernible without instruments at any point on the property line of the lot on which the use is located.

16.502.09 – Noise

C. General Requirements

2. Noise Standards. **Table 15** classifies uses and facilities and establishes exterior and interior noise standards applicable to all uses and facilities in each classification that is not exempt from these requirements pursuant to Subsection B. The requirements impose limits on regularly occurring noise for the specified time periods, averaged over an hour, and do not apply to incidental, infrequent, or unexpected noise, which are subject to Vallejo Municipal Code Chapter 7.84, Regulations of Noise Disturbances. The prohibitions contained in Municipal Code Chapter 7.84, apply to all land uses and activities in the city, and, in the case of a conflict, the more restrictive provisions apply.

Table 15: 16.502-C: Maximum Noise Level by Noise Zone (dBA)

Noise Zoning Districts	Maximum Noise level (level not to be exceeded more than 30 minutes in any hour) Measured at Property Line or District Boundary	Maximum Noise level (level not to be exceeded more than 30 minutes in any hour) Measured at Any Boundary of a Residential Zone	Maximum Noise Level (level not to be exceeded more than 5 minutes in any hour) Between 10 PM and 7AM, Measured at Any Boundary of a Residential Zone
Single-Unit Residential	60	60	--
Multiple-Unit Residential	65	65	--
Commercial and Mixed-Use, Medical, Office	70	60	50 or ambient noise level
Light Industrial	75	65	50 or ambient noise level
General Industrial	75	65	50 or ambient noise level
Public Facilities and Community Use	65	60	50 or ambient noise level
Open Space and Recreational Districts	65	60	50 or ambient noise level

3. The standard limits in **Table 16** shall be adjusted by five decibels for any noise that contains a steady, pure tone such as a whine, screech or hum, or an impulsive sound such as hammering or riveting, or contains music or speech, as described in the following table.

Table 16: 16.502-D: Maximum Noise Level Adjustment by Time and Type

Time and Type of Noise	Adjustment (Decibels)
Any type other than construction and related activities between 7 am and 10 pm	+5
Noise of unusual impulsive character (e.g., hammering or drilling)	-5
Noise of unusual periodic character (e.g., hammering or screeching)	-5

D. Additional Regulations. In addition to the following restrictions, hours may be modified with condition imposed by any conditional use permit or variance. The most restrictive hours shall apply.

1. Construction hours. Construction, demolition, and related loading/unloading activities that may generate noise exceeding levels in **Table 17** shall be limited to hours between 7:00 a.m. and 7:00 p.m. in residential zoning districts and in any mixed-use district.

Table 17: 16.502-E: Maximum Noise Level for Temporary Construction Activity

Time	RR, RLD	RMD, RHD, NMX, NC	Commercial (including medical and office) and industrial
Mobile Construction equipment – non-scheduled, intermittent, and short term for less than 15 days			
Weekdays 7 a.m. to 6 p.m.	75 dBA	80 dBA	85 dBA
Saturdays 9 a.m. to 6 p.m.	60 dBA	65 dBA	70 dBA
Sundays and legal holidays	None	None	None
Stationary construction equipment			
Weekdays 7 a.m. to 6 p.m.	60 dBA	65 dBA	70 dBA
Saturdays 9 a.m. to 6 p.m.	60 dBA	65 dBA	70 dBA
Sundays and legal holidays	None	None	None

Environmental Setting

Acoustical Background and Terminology

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10-dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60-dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (DNL or L_{dn}) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 18 lists several examples of the noise levels associated with common situations.

Table 18: Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock Band
Jet Fly-over at 300 m (1,000 ft.)	100	
Gas Lawn Mower at 1 m (3 ft.)	90	
Diesel Truck at 15 m (50 ft.), at 80 km/hr. (50 mph)	80	Food Blender at 1 m (3 ft.) Garbage Disposal at 1 m (3 ft.)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft.)	70	Vacuum Cleaner at 3 m (10 ft.)
Commercial Area Heavy Traffic at 90 m (300 ft.)	60	Normal Speech at 1 m (3 ft.)
Quiet Urban Daytime	50	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet Rural Nighttime	20	Bedroom at Night, Concert Hall (Background)
	10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. September 2013

The effects of noise on people can be placed into three categories:

- Subjective effects of annoyance, nuisance, dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regards to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6-dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles, would typically attenuate at a lower rate.

Vibration Background and Terminology

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

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 X, which was developed by 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.

The threshold for architectural damage to structures is 0.20 in/sec p.p.v. A threshold of 0.20 in/sec p.p.v. is considered to be a reasonable threshold for short-term construction projects.

Table 19: Effects of Vibration on People and Buildings

Peak Particle Velocity (mm/second)	Peak Particle Velocity (in/second)	Human Reaction	Effect on Buildings
0.15 – 0.20	0.006 – 0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10 - 15	0.4 – 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: Transportation Related Earthborne Vibrations. Caltrans. TAV-02-01-R9601. February 20, 2002

Sensitive Receptors

Some land uses are considered more sensitive to noise than others due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Residences, schools, libraries, hospitals, and passive recreation areas generally are more sensitive to noise than commercial or industrial land uses. Sensitive noise receptors may also include threatened or endangered noise-sensitive biological species. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

HAZARDOUS MATERIALS AND HAZARDS– SECTION 3.12 OF THE EA

Regulatory Setting

Federal

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) regulates the land disposal of hazardous materials from cradle-to-grave. This means establishing a regulatory framework for the generation, transport, treatment, storage and disposal of hazardous waste. Specifically, Subtitle D of RCRA pertains to non-hazardous solid waste and Subtitle C focuses on hazardous solid waste. A solid waste can consist of solids, liquids and gases, but these

must be discarded in order to be considered waste. Additionally, the USEPA has developed regulations to set minimum national technical standards for how disposal facilities should be designed and operated. States issue permits to ensure compliance with USEPA and state regulations. The regulated community is comprised of a diverse group that must comprehend and adhere to RCRA regulations. These groups can consist of hazardous waste generators, government agencies, small businesses, and gas stations with underground petroleum tanks.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is designed to investigate and clean up sites contaminated with hazardous substances. Sites managed under this program are referred to 'Superfund sites.' CERCLA (1) established prohibitions and requirements concerning closed and abandoned hazardous waste sites, (2) provided for liability of persons responsible for releases of hazardous waste at these sites; and (3) established a trust fund to provide for cleanup when no responsible party could be identified. Under CERCLA, the USEPA seeks to identify parties responsible for releases of hazardous substances into the environment and either compel them to clean up the sites or undertake the cleanup on its own and seek to recover those costs from the responsible parties through settlements or other legal means. CERCLA authorizes the USEPA to undergo two different types of response actions: (1) short-term removals, which may address releases or threatened releases requiring prompt response, and (2) long-term remedial response actions, that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. These actions can be conducted only at sites listed on the USEPA's National Priorities List.

Food, Drug, and Cosmetic Act

Under the federal Food, Drug, and Cosmetic Act, the USEPA sets maximum residue limits, or tolerances, for pesticides residues on food. When the USEPA sets a tolerance level for a food, this is the level deemed safe. In defining safe, this means that, "reasonable certainty that no harm will result from aggregate exposure to the pesticide residue." When determining a safety finding for a tolerance level, the USEPA considers the toxicity of the pesticide and its break-down products, aggregate exposure to the pesticide in foods and from other sources of exposure if applicable, and any special risks specific to infants and children. If a tolerance is not set for a pesticide residue, a food containing that pesticide residue will be subject to government seizure if deemed appropriate. However, once a tolerance has been established for a pesticide residue, then residue levels below the tolerance will not trigger enforcement actions. If the residue level is detected above that tolerance, then the commodity will be subject to seizure. Some pesticides do not have a set tolerance level as the USEPA may grant exemptions in the cases where the pesticide residue does not pose, under foreseeable situations, a significant dietary risk.

Insecticide, Fungicide, and Rodenticide Act

The federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) addresses the sale, distribution, and labeling of pesticides, as well as the certification and training of pesticide applicators. FIFRA establishes recordkeeping and reporting requirements on certified applicators of restricted use pesticides. Furthermore, FIFRA imposes storage, disposal, and transportation requirements on registrants and applicants for the registration of pesticides. Pesticide use is regulated through requirements to apply pesticides in a manner consistent with the label. The labeling requirement includes directions for use, warnings, and cautions along with the uses for which the pesticide is registered (e.g., pests and appropriate applications). This includes the specific conditions for the application, mixture, and storage of the pesticide. Additionally, the label must specify a time period for re-entry into an area after the pesticide has been applied, and when crops may be harvested after the application of the pesticide. If a pesticide is used in a manner contrary to specifics on its label, then the use constitutes a violation of the FIFRA.

Hazardous Communication Standard

The Occupational Safety and Health Administration helps ensure employee safety by regulating the handling and use of chemicals in the workplace. For instance, it administers the Hazard Communication Standard (HCS). The HCS ensures safety in the workplace concerning chemicals through requiring information to be provided and understood by workers about the identity and hazards associated with chemicals they may work with. This also requires that chemical manufactures and importers evaluate the hazards associated with the chemicals they create or import, and that these chemicals have proper labels and material safety data sheets concerning their hazards to others (e.g., customers). Downstream of the production, employers who utilize these hazardous chemicals in their workplaces are obligated to have labels and safety data sheets for their workers and to train them on the proper handling of these chemicals.

Hazardous Substances Act

The Consumer Product Safety Commission has a limited role in regulating hazardous substances; it primarily deals with the labeling of consumer products through the federal Hazardous Substances Act (HSA). HSA only requires products that may at some point be in the presence of people's dwellings to be labeled, including during purchase, storage, or use. These labels must alert consumers of the potential hazards that the product may pose. However, in order for a product to be required for labelling, the product must be toxic, corrosive, flammable/combustible, an irritant, a strong sensitizer, or have the ability to generate pressure through decomposition, heat, or other means. Furthermore, the product must possess the ability to cause severe personal injury or substantial illness during or as a result of any customary or reasonably predictable handling or use, including reasonably foreseeable ingestion by children.

Toxic Substances Control Act

The federal Toxic Substances Control Act (TSCA), as amended by the Frank R. Lautenberg Chemical Safety for the 21st Century Act, permits the USEPA to evaluate the potential risk from novel and existing chemicals and address unacceptable risks chemicals may have on human health and the environment. The USEPA oversees the production, importation, use, and disposal of certain chemicals. This includes the USEPA having the authority to require record keeping, reporting, and test requirements and restrictions associated with certain chemical substances and/or mixtures. However, certain groups of chemicals are excluded from TSCA consideration, including—but not limited to—food, drugs, cosmetics and pesticides. Examples of chemicals included in TSCA consideration are lead paint, asbestos, mercury, formaldehyde, and polychlorinated biphenyls.

Emergency Planning and Community Right-to-Know Act

The federal Emergency Planning and Community Right-to-Know Act (EPCRA) is designed to assist local communities protect public health, safety, and the environment from chemical hazards. The Community Right-to-Know provisions help increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. The EPCRA also requires industry to report on the storage, usage, and releases of hazardous substances to federal, state, and local governments, and states and communities can use the information gained to improve chemical safety and protect public health and the environment.

National Fire Protection Association Codes and Standards

The National Fire Protection Association (NFPA) publishes more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other risks, including, but not limited to (NFPA, 2022):

- NFPA 13 Standard for the Installation of Sprinkler Systems

- NFPA 72 National Fire Alarm and Signaling Code
- NFPA 88A Standard for Parking Structures
- NFPA 1660 Standard for Emergency, Continuity, and Crisis Management: Preparedness, Response, and Recovery
- NFPA 1140 Standard for Wildland Fire Protection

State and Local

California Air Resource Board

The California Air Resource Board's Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations, adopted in 2001, mandates the use of best available dust mitigation measures in specified activities where naturally occurring asbestos is present or likely to be found. The ATCM applies to construction, grading, quarrying, and surface mining operations in areas with ultramafic rock or serpentine. It requires air pollution control districts to enforce these measures or propose their own, ensuring activities comply with regulations to minimize asbestos exposure and protect air quality

California Department of Forestry and Fire Protection (CalFire)

California Department of Forestry and Fire Protection (CalFire) is responsible for protecting natural resources from fire on land designated as within the State Responsibility Area (SRA). Public Resources Code 4201-4204 specifies that lands within SRAs be classified into fire hazard severity zones. These zones are classified based on fuel loading, slope, fire weather, wind, and other relevant factors. CalFire protects over 31 million acres of California's wildlands and provides emergency services in 36 of the state's 58 counties.

Solano County General Plan Public Health and Safety Chapter

The Solano County General Plan Public Health and Safety Chapter contains goals, objectives, and policies to provide protection from wildland fire hazards. The County developed fire safety policies and programs to align with its vision of balancing human and environmental needs. While maintaining natural fire ecology benefits the environment, it can also cause significant harm to people and property. To achieve a sustainable balance, the County aims to direct development away from high-risk fire zones and mitigate the impact of wildfires on developed areas (Solano County, 2015). To meet this objective the following policies are outlined:

> **Policy HS.P-20**: Require that structures be built in fire defensible spaces and minimize the construction of public facilities in areas of high or very high wildfire risk.
>
> **Policy HS.P-22**: Require new developments in areas of high and very high wildfire risk to incorporate fire-safe building methods and site planning techniques into the development.

The Solano County Multijurisdictional Hazard Mitigation Plan (MHMP) was last updated in 2022 and defines measures to reduce risks from natural disasters, including wildfire, in Solano County. The plan complies with federal and state hazard mitigation planning requirements to establish eligibility for funding under Federal Emergency Management Agency (FEMA) grant programs for all planning partners.

The MHMP identifies that home loss in wildland fires is primarily driven by two equally important factors: 1) the vulnerability of buildings that make them prone to ignition, and 2) The vegetative fuels within 100 feet of structures (the area referred to as defensible space). Mitigating large-scale loss of life and property can be achieved through using relatively well-established techniques of home hardening, defensible space, and vegetation management at the scale of whole communities and the natural landscapes that surround them.

Solano County Emergency Operations Plan

The Solano County Emergency Operations Plan (EOP; Solano County, 2024) is designed to ensure coordinated efforts among agencies and jurisdictions within Solano County to protect life, property, and the environment during disasters. Aligning with California's Standardized Emergency Management System (SEMS), this Plan establishes a framework for a unified response during emergencies, providing stability and coordination.

Emergency response operations within the Operational Area are directed by hazard- and sector-specific Standard Operating Procedures (SOPs), which are created and maintained by partner agencies typically responsible for those emergencies. These SOPs, often included as annexes, are regularly updated by the relevant departments and agencies. Some key annexes include:

The Functional Annex, which details strategies, procedures, and organizational structures for managing large-scale evacuations in Solano County (Solano County, 2024).

This EOP was developed under the guidance of the Solano County Office of Emergency Services to create a comprehensive approach to handling extraordinary incidents, including natural, technological, and human-caused emergencies, as well as large events requiring coordinated responses. It adheres to SEMS, the National Incident Management System (NIMS), and relevant local and state laws, and aligns with standards from FEMA and the California Governor’s Office of Emergency Services (Cal OES).

The plan establishes an emergency management structure outlining the roles and responsibilities of government organizations and connects local, state, federal, and private resources for emergency support. Developed with the cooperation of various County departments and agencies, all Solano County departments, offices, and employees are expected to comply fully with the actions detailed in the plan. This EOP applies to all agencies and individuals involved in emergency preparedness, response, recovery, and mitigation in unincorporated areas of the county. Incorporated cities within the county are responsible for maintaining their own EOPs in line with the policies and procedures of this plan.

Solano County Community Wildfire Protection Plan

The Solano County Community Wildfire Protection Plan (SCCWPP) addresses wildfire risks to protect human life and property. It assesses wildfire risks countywide, uniting stakeholders involved in wildfire management. The SCCWPP serves as a comprehensive assessment of wildfire risk across the County's diverse landscapes. It involved collaborative modeling and mapping of fire behavior, vegetative fuels, topography, and exposure to pinpoint areas of highest risk. A substantial portion of western Solano County was categorized as high or extreme risk due to the rugged terrain, wildland vegetation, and wildland-urban interface locations.

By identifying gaps and deficiencies, the SCCWPP provides a framework for future planning and mitigation, including actionable projects. Developed by a team of federal, state, and local agencies, and community organizations, the Plan involved modeling and mapping wildfire risks, identifying hazards, and incorporating public input through meetings, surveys, and workshops. It aligns with the wildfire-specific actions in the Mitigation Action Plan of the Solano County Multi-Jurisdictional Hazard Mitigation Plan (Solano County, 2023). The SCCWPP provides a collaborative framework for wildfire management.

The SCCWPP emphasizes that shared responsibility between governments and the public is key to effectively reduce Solano County's growing wildfire risk driven by climate change and other factors. The safe and efficient evacuation from wildfire involves several factors, including the implementation of public alerts and warning systems. Solano County has implemented a countywide emergency notification system in cooperation with its municipalities. The Alert Solano Emergency Notification System allows residents to register phone numbers and

emails to receive alerts. This allows county and municipal emergency agencies to rapidly communicate information regarding severe weather and disasters, evacuation notices, road closures, and any other relevant emergency information additional information can be found in the MJHMP.

City of Vallejo General Plan 2040

The City of Vallejo General Plan is a state-mandated, long-range planning document that guides land use policies and physical development in California municipalities. Propel Vallejo: General Plan 2040 directs future changes within Vallejo and its Sphere of Influence, addressing city-wide issues and trends for the next 25 years, ensuring policy consistency (City of Vallejo, 2017).

Nature and Built Environment Element

The General Plan is the City's primary land use regulatory tool and outlines the steps needed to achieve the community's vision for the future. The Nature and Built Environment Element includes goals, policies, and actions relating to five key goals: Beautiful City, A Place Where People Want to Be, Pride in Identity, Iconic Waterfront, and Hazard Protection.

Goal NBE-1: Hazard Protection: Protect life and property from natural and human-made hazards.

> **Policy NBE-5.4**: Project Location and Design. Prohibit development in any area where it is determined that the potential risk from natural hazards cannot be mitigated to acceptable levels.
>
> > **Action NBE-5.4C:** Continue to use the development review process to ensure that development is planned and constructed to resist the encroachment of uncontrolled fire.
>
> **Policy NBE-5.10:** Site Safety. Ensure that affected soil, groundwater, or buildings will not have the potential to adversely affect the environment or the health and safety of site occupants.
>
> > **Action NBE-5.10A:** Continue to require remediation of hazardous material releases from previous land uses as part of any redevelopment activities.
> >
> > **Action NBE-5.10B:** Continue to require environmental site assessments stipulated by State and County regulations for potential hazardous material releases from prior uses and assessments for lead and asbestos present in building materials.
>
> **Policy NBE-5.11:** Risk Reduction. Reduce the risk of hazardous materials accidents, spills, and vapor releases, and minimize the effects of such incidents if they occur.
>
> > **Action NBE-5.11A:** Continue to require the preparation of Hazardous Materials Business Plans for new uses that will handle hazardous materials, including inventory of materials by type, quantities, and conditions of storage and transportation, assessment of potential hazards associated with the materials, and steps to be taken to minimize risks and in the event of a spill.

Environmental Setting

Phase I Environmental Site Assessment

Methodology

Under the American Society for Testing and Materials (ASTM) Standard Practice E 1527-21, RECs are defined as the presence or probable presence of any petroleum products or hazardous substances in, on, or at a property due to one or more of the following conditions:

- a release into the environment,
- signs indicative of a release to the environment, or
- circumstances that pose a material threat of a future release to the environment.

The Phase I ESA was prepared in accordance with the ASTM Standard Practice E 1527-21, and USEPA Final Rule regarding Standards and Practices for All Appropriate Inquiries (40 CFR Regulations Part 312). In addition to RECs, the Phase I ESA assessed Historical RECs (HRECs) and Controlled RECs (CRECS). The Phase I ESA conducted historical research that included reviewing aerial photographs and topographical maps, interviews, a site reconnaissance of accessible areas on the Project Site occurred on September 9, 2022, and a database review that included regulatory, State, and local databases entries up to a one-mile radius of the Project Site (**Appendix M-1**).

In addition, the Phase I ESA conducted historical research that included reviewing aerial photographs and topographical maps, interviews, a site reconnaissance of accessible areas on the Project Site, and a database review. The site reconnaissance visit occurred on September 9, 2022. The database review included regulatory, state, and local databases up to a one-mile radius surrounding the Project Site. The property owner was interviewed regarding the past and current use of the Project Site, and similarly did not report any RECs, HRECs, or CRECs relative to hazardous materials, hazardous waste, or chemical use, storage, or disposal (**Appendix M-1**).

Results and Recommendations

The Phase I ESA concluded that no RECs, Historical RECs (HRECs), or Controlled RECs (CRECs) were connected with the Project Site and none were observed during the Phase I site visit. The observations and recommendations of the Phase 1 ESA are summarized below and described in more detail in **Appendix M-1**:

- A serpentine mine existed in the central portion of the property in the past;
- There is a monitoring well for Per- and Polyfluoroalkyl Substances (PFAS) on-site; and
- St. John's Mine, an inactive mercury mining operation approximately 1 mile northeast of the property, was active until 1923 (Bowen, 2004).

None of the listed sites in the vicinity were considered able to affect the Project Site and ultimately the regulatory records did not reveal any RECs, HRECs, or CRECs. Despite the absence of RECs, HRECs, and CRECs, the Phase I ESA recommended additional testing for thorough due diligence given the site's history of mining activity. The Phase I ESA made the following recommendations based on the findings and conclusions:

- Ground-disturbing activities occurring on the Project Site should follow a dust control plan;
- Mine tailings piles should be tested to ensure that no toxic substances are contained therein; and
- Monitoring well data should be reviewed as part of project planning.

Naturally Occurring Asbestos

During the preliminary geotechnical exploration, silica-carbonate rock was identified as part of the Jurassic-age Coast Range Ophiolite sequence, which includes other ultramafic rocks such as basalt, gabbro, and serpentinite (**Appendix D**). Serpentinite can include naturally occurring asbestos (NOA), particularly within the mineral chrysotile. Asbestos is the name for a group of naturally occurring silicate minerals. Exposure to friable asbestos may result in inhalation or ingestion of asbestos fibers, which over time may result in damage to the lungs or membranes that cover the lungs, leading to illness or even death. When material-containing NOA is disturbed, the asbestos fibers can become airborne, thereby creating a potential health hazard. NOA can became airborne due to natural causes (e.g., weathering, erosion) or human activities (e.g., grading, cracking/crushing of rock that contains NOA). Since 1986, the California Air Resources Board (CARB) has recognized asbestos as a Toxic Air Contaminant. CARB regulates construction, grading, and other activities that can cause NOA to become airborne.

Wildfire

Terminology

The terms wildfire hazard and wildfire risk are often used incorrectly and interchangeably, or even combined to create the term "wildfire hazard risk."

State Responsibility Areas (SRAs) are recognized by the California State Board of Forestry as areas where the California Department of Forestry and Fire Protection (CalFire) is the primary emergency response agency responsible for fire suppression and prevention. PRC Section 4202 requires the State Fire Marshal to classify lands within SRAs into fire hazard severity zones (FHSZs). The FHSZs that are published by CalFire describe the ***wildfire hazard***, which is the likelihood of a wildland fire occurring at a location and the potential intensity at which it will occur. Wildfire hazards throughout SRAs are designated by consideration of factors such as wildland fuels, terrain, and weather. Wildland fuels, primarily vegetation, are the main drivers of wildfire combustion.

The term ***wildfire risk*** describes the wildfire hazard along with the factors that contribute to the susceptibility of an area to wildfire damage, or the impact wildfire may have on what are considered highly valued resources and assets. The wildfire risk combines the likelihood of ignitions and intensity of a fire (the components that make up the hazard) and factors in the susceptibility of the built environment. As an example, an extremely remote forest with many dead trees but no roads or homes may have a high wildfire hazard, but in the absence of structures the overall wildfire risk in the area may be lower than a similar forest with numerous scattered homes.

Evacuation Notification, Routes, and Zones

The Solano County Emergency Operations Plan (EOP) Protective Actions and Transportation Coordination annexes outline the strategies, procedures, and organizational structures to be used in managing coordinated, large-scale evacuations in Solano County. As described therein, the nature and timing of evacuation orders for a particular event are based on several considerations, including the nature and severity of the impact, area affected and likely to be affected, expected duration of the incident, number of people to be evacuated, time available for evacuation, and impediments to and capacity of evacuation routes.

The safe and efficient evacuation from wildfire involves several factors, including the implementation of public alerts and warning systems. Solano County has implemented a countywide emergency notification system in cooperation with its municipalities. The Alert Solano Emergency Notification System allows residents to register phone numbers and emails to receive alerts. This allows county and municipal emergency agencies to rapidly

communicate information regarding severe weather and disasters, evacuation notices, road closures, and any other relevant emergency information additional information can be found in the MJHMP.

Interstate 80 (I-80) and State Route 37 (SR-37) are identified as two major regional transportation corridors that may be used in an evacuation. The Project Site is located in Evacuation Zone VLJ-1138. Evacuation Zones SOL-3190 and NPA-E259, are north of the Project Site and are largely undeveloped open space. Evacuation Zones VLJ-1120 and SOL 3192 are to the east of the Project Site and Zone VLJ-1120 contains a residential neighborhood. The mixed commercial-residential areas to the south are located in Evacuation Zones VLJ-1166, VLJ-1136, VLJ-1162, and VLJ-1134. The Solano County Fairgrounds to the southwest of the Project Site is its own Evacuation Zone (SOL-3208). The west side of I-80 west of the Project Site includes Evacuation Zones VLJ-1114, VLJ-1116, and VLJ-1118.

VISUAL RESOURCES – SECTION 3.13 OF THE EA

Regulatory Setting

State and Local

City of Vallejo General Plan

The City of Vallejo's General Plan addresses visual resources by providing guidelines and policies aimed at preserving and enhancing the city's aesthetic and scenic qualities. These policies focus on protecting significant views, maintaining the character of neighborhoods, and ensuring new developments are visually harmonious with their surroundings.

The Vallejo General Plan Nature and Built Environment Element contains goals, policies and actions designed to enhance the natural and urban environment in Vallejo and the Planning Area.

Goal CP-1: Healthy Community: Promote the health of all Vallejoans.

> **Policy CP-1.7**: Green Space. Promote community physical and mental health through provision and preservation of the urban forest, natural areas, and "green" infrastructure (i.e. best practices water management).
>
> > **Action CP-1.7C**: Support efforts by stewardship agencies to preserve wetland and open space areas.

Goal NBE-1: Preserve and enhance the natural, historic, and scenic resources that make Vallejo special.

> **Policy NBE-1.5**: Scenic Vistas. Protect and improve scenic vistas, including views from Interstate 80 and State Route 37 in Vallejo.
>
> > **Action NBE-1.5A**: Identify existing scenic vistas and update City regulations to specify requirements for protection of existing scenic vistas.
> >
> > **Action NBE-1.5B**: Update City regulations for development within view of freeways in Vallejo.

Action NBE-1.5C: Continue to administer the residential view district regulations intended to preserve panoramic views of the surrounding natural and human-made environment from residential neighborhoods located on hills.

Policy NBE-1.6: Open Space. Conserve and enhance natural open space areas in and adjacent to Vallejo and its waterfront.

Action NBE-1.6B: Identify lands in Vallejo that provide connections for animals between open spaces and/or important habitat, and assist conservation agency efforts to acquire land and/or establish easements that facilitate wildlife movement.

Goal NBE-2: A Place Where People Want to Be: Establish Vallejo as an attractive place to live, work, shop, and enjoy time off

Policy NBE-2.1: Strengthen Local Identity. Focus future growth to foster a vibrant Downtown/Waterfront District, strong job centers, comfortable neighborhoods, thriving neighborhood corridors and urban villages, and retail/entertainment clusters that draw visitors from the city and the region.

Action NBE-2.1A: Use the development review process, as appropriate, to facilitate attractive, creative development.

Policy NBE-2.3: Inviting, Compatible Design. Promote attractive development that is compatible with surrounding uses.

Action NBE-2.3A: Continue to utilize development approval conditions to achieve compatibility between nearby uses and scale and style of buildings, and to establish limitations on activities that could create potential adverse effects.

City of Vallejo Title 16: Zoning Code

The City of Vallejo Zoning Code contains development criteria for new construction within the city that emphasizes the preservation of scenic views and the minimization of visual impacts from new development. This includes regulations on building heights, setbacks, and design standards that maintain the visual character of the area.

Additionally, the City of Vallejo Zoning Code includes the following lighting and glare development standards, intended to maintain adequate visibility and safety, conserve energy, and protect against direct glare and excessive lighting.

Chapter 16.506 – Lighting and Glare

16.506.04 – General Requirements

A. All outdoor lighting on private property includes light fixtures attached to buildings, structures, poles, or self-supporting structures. Exterior lighting may be found on parking lots, walkways, building entrances, outdoor sales areas, landscaping, recreational fields, and building faces.
B. Lighting shall be designed, located, and installed to be directed downward or toward structures, be shielded or fully shielded, and shall be well-maintained in order to prevent glare, light trespass (unwanted light on adjacent lots and public rights-of-way), and light pollution to the maximum extent

feasible. No permanently installed lighting shall blink, flash, or be of unusually high intensity or brightness, as determined by the director.

C. Maximum Height. Outdoor light standards shall not exceed the following maximum heights:
   1. Residential Zoning Districts: seventeen feet
   2. Non-Residential Zoning Districts (excluding Industrial Zoning Districts: twenty feet
   3. Industrial Zoning Districts: twenty-five feet
   4. Non-Residential within twenty feet of a residential zoning district or use: seventeen feet.

D. Timing. All outdoor lighting in non-residential zoning districts shall be turned off during daylight hours and during any hours when the building is not in use and the lighting is not required for security. Time clocks or photo-sensor systems may be required as a condition of approval of a discretionary permit.

E. Energy Efficiency. Outdoor lighting shall use energy-efficient fixtures/lamps. Examples of energy efficient fixtures/lamps include high pressure sodium, hard-wired compact florescent, or other lighting technology that is of equal or greater energy efficiency.

F. For safety and security, during business hours, all areas having frequent vehicular and pedestrian traffic shall be equipped with a lighting device providing a minimum one-foot candle of light at ground level during the hours of darkness.

G. Design of Fixtures. Fixtures shall be appropriate to the style and scale of the architecture and be shielded as required by Paragraph (I) below. The top of the fixture shall not exceed the height of the parapet or roof or eave of roof.

H. Entrances in Multi-Unit Residential Development. All entrances to multi-unit residential buildings containing more than four units shall be lighted with low intensity fixtures to ensure the safety of persons and the security of the building.

I. Shielding. Lighting fixtures shall be shielded or recessed to reduce light bleed to adjoining properties, by:
   1. Ensuring that the light source (e.g., bulb, etc.) is not visible from off the site; and
   2. Confining glare and reflections within the boundaries of the site to the maximum extent feasible.
   3. Each light fixture shall be directed downward and away from adjoining properties and public rights-of-way, so that no on-site light fixture directly illuminates an area off the site.
   4. Lighting on private property shall not produce an illumination level greater than one foot-candle on any property within a residential zoning district except on the site of the light source.
   5. All nonexempt outdoor lighting fixtures shall be shielded to meet standards in **Table 20**.

J. Total Outdoor Light Output Standards. Total non-exempt outdoor light output shall not exceed the limits in **Table 21**. Lighting used for external illumination of signs is counted, while lighting used for internal illumination of signs is not counted.

Table 20: 16.506-A: Lamp Type and Shielding Standards

Use Class and Lamp Type	DMX, WMX, CC, RC, IL, IG	RMD, RHD, NMX, NC, WC, WMX, O, M, PS	RR, RLD, PROS, and RCN
Class 1 Lighting (Color Rendition)			
Initial output greater than or equal to 2,000 lumens	F	F	F
Initial output below 2,000 lumens	A	A	A
Class 2 Lighting (General Illumination			
Initial output greater than or equal to 2,000 lumens	F	F	F
Initial output below 2,000 lumens	A	A	A
Class 3 Lighting (Decorative)			
Initial output greater than or equal to 2,000 lumens	F	F	X
Initial Output below 2,000 lumens	A	A[2]	F
Residential Lighting (all Classes)	F	F	F
Initial output greater than or equal to 3,000 lumens	F	F	F
Initial output below 3,000 lumens	A	A	A[2]

Use Codes: A = all types of fixtures allowed; shielding not required but highly recommended, except that any spot or floodlight shall be aimed no higher than 45 degrees above straight down F = only fully shielded fixtures allowed X = not allowed

Table 21: 16.506B: Maximum Total Outdoor Light Output Standards

Lumen Caps – Initial LANP Lumens Per Net Acre	Lighting Zones: DMX, WMX, CC, RC, IL, IG, LZ 3	Lighting Zones: RMD, RHD, NMX, NC, WC, WMX, O, M, PS, LZ 2	Lighting Zones: RR, RLD, PROS, and RCN, LZ 3
Commercial and Industrial Zoning			
Total (fully shielded and unshielded)	200,000	100,000	50,000
Unshielded only	10,000	10,000	4,000
Residential and Mixed-Use Zoning			
Total (fully shielded and unshielded)	20,000	10,000	10,000
Unshielded only	5,000	5,000	1,000

1. Outdoor light fixtures installed on poles (such as parking lot luminaries) and light fixtures installed on the sides of buildings or other structures, when not shielded from above by the structure itself are to be included in the total outdoor light output by simply adding the initial lumen outputs of the lamps.
2. Outdoor light fixtures installed under canopies, buildings (including parking garage decks), overhangs or roof eaves where all parts of the lamp or luminaire are located at least five feet but less than ten feet from the nearest edge of the canopy or overhang are to be included in the total outdoor light output as though they produced only one-quarter (0.25) of the lamp's rated initial lumen output.

3. Outdoor light fixtures installed under canopies, buildings (including parking garage decks), overhangs, or roof eaves where all parts of the lamp or luminaire are located at least ten feet but less than thirty feet from the nearest edge of the canopy or overhang are to be included in the total outdoor light output as though they produced only one-tenth (0.10) of the lamp's rated initial lumen output.
4. Outdoor light fixtures installed under canopies, buildings (including parking garage decks), overhangs, or roof eaves where all parts of the lamp or luminaire are located thirty or more feet from the nearest edge of the canopy or overhang are not to be included in the total outdoor light output.

K. Maintenance. Fixtures and lighting shall be maintained in good working order and in a manner that serves the original design intent.

Dark-Sky Association's Model Lighting Ordinance

The International Dark-Sky Association and the Illuminating Engineering Society of North America have developed a Model Lighting Ordinance to address the need for strong, consistent outdoor lighting regulation in North America (IDA, 2011). The purpose of the Model Lighting Ordinance is to provide regulations for outdoor lighting that will:

- Permit the use of outdoor lighting that does not exceed the minimum levels specified in Illuminating Engineering Society recommended practices for night-time safety, utility, security, productivity, enjoyment, and commerce;
- Minimize adverse offsite impacts of lighting such as light trespass, and obtrusive light;
- Curtail light pollution, reduce skyglow and improve the nighttime environment for astronomy;
- Help protect the natural environment from the adverse effects of night lighting from gas or electric sources; and
- Conserve energy and resources to the greatest extent possible.

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