

3.5 HAZARDS AND HAZARDOUS MATERIALS

This section describes the existing setting related to hazards and hazardous materials based on the current conditions, a regulatory database search for the project area, and the federal, state, and local regulations related to hazardous materials that may apply to the project area. The impacts of airborne toxics risks are discussed in Section 3.3, “Air Quality.”

3.5.1 REGULATORY SETTING

DEFINITIONS OF TERMS

For purposes of this section, the term “hazardous materials” refers to both hazardous substances and hazardous wastes. A “hazardous material” is defined in the Code of Federal Regulations (CFR) as “a substance or material that ... is capable of posing an unreasonable risk to health, safety, and property when transported in commerce” (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

“Hazardous material” means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. “Hazardous materials” include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

“Hazardous wastes” are defined in California Health and Safety Code Section 25141(b) as wastes that:

... because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness [, or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

FEDERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY

The U.S. EPA is the agency primarily responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. Applicable federal regulations pertaining to hazardous materials are contained mainly in CFR Titles 29, 40, and 49. Hazardous materials, as defined in the CFR, are listed in 49 CFR 172.101. Management of hazardous materials is governed by the following laws (which are described below):

- ▲ Resource Conservation and Recovery Act of 1976 (RCRA) (42 U.S. Code [USC] 6901 et seq.);
- ▲ Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, also called the Superfund Act) (42 USC 9601 et seq.); and
- ▲ Superfund Amendments and Reauthorization Act (SARA) of 1986 (Public Law 99-499).

These laws and associated regulations include specific requirements for facilities that generate, use, store, treat, and/or dispose of hazardous materials. The U.S. EPA provides oversight and supervision for federal Superfund investigation/remediation projects, evaluates remediation technologies, and develops hazardous materials disposal restrictions and treatment standards.

RESOURCE CONSERVATION AND RECOVERY ACT

RCRA establishes a framework for national programs to achieve environmentally sound management of both hazardous and nonhazardous wastes. RCRA was designed to protect human health and the environment, reduce/eliminate the generation of hazardous waste, and conserve energy and natural resources. RCRA also promotes resource recovery techniques. A waste can legally be considered hazardous if it is classified as ignitable, corrosive, reactive, or toxic. Under RCRA, the U.S. EPA regulates hazardous waste from the time that the waste is generated until its final disposal (“cradle to grave”). The Hazardous and Solid Waste Amendments of 1984 (HSWA) both expanded the scope of RCRA and increased the level of detail in many of its provisions. The Hazardous Waste Management subchapter of the RCRA deals with a variety of issues regarding the management of hazardous materials including the export of hazardous waste, state programs, inspections of hazardous waste disposal facilities, enforcement, and the identification and listing of hazardous waste.

CERCLA

Under CERCLA, the U.S. EPA has authority to seek the parties responsible for releases of hazardous substances and ensure their cooperation in site remediation. CERCLA also provides federal funding (the “Superfund”) for remediation.

SARA

SARA Title III, the Emergency Planning and Community Right-to-Know Act (EPCRA), requires companies to declare potential toxic hazards to ensure that local communities can plan for chemical emergencies. The U.S. EPA maintains a National Priority List of uncontrolled or abandoned hazardous waste sites identified for priority remediation under the Superfund program. The U.S. EPA also maintains the Comprehensive Environmental Response, Compensation, and Liability Information System database, which contains information on hazardous waste sites, potential hazardous waste sites, and remedial activities across the nation.

TOXIC SUBSTANCES CONTROL ACT

The Toxic Substances Control Act of 1976 (15 USC 2605) banned the manufacture, processing, distribution, and use of polychlorinated biphenyls (PCBs) in totally enclosed systems. PCBs are considered hazardous materials because of their toxicity; they have been shown to cause cancer in animals, along with effects on the immune, reproductive, nervous, and endocrine systems, and studies have shown evidence of similar effects in humans (U.S. EPA 2013a). The U.S. EPA Region 9 PCB Program regulates remediation of PCBs in several states, including California.

HAZARDOUS MATERIALS TRANSPORTATION ACT

The transportation of hazardous materials is regulated by the Hazardous Materials Transportation Act (HMTA), which is administered by the Research and Special Programs Administration of the U.S. Department of Transportation (DOT). HMTA provides DOT with a broad mandate to regulate the transport of hazardous materials, with the purpose of adequately protecting the nation against risk to life and property that is inherent in the commercial transportation of hazardous materials. The HMTA governs the safe transportation of hazardous materials by all modes, excluding bulk transportation by water. DOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or is involved in any way with the manufacture or testing of hazardous materials packaging or containers. DOT regulations pertaining to the actual movement govern every aspect of the movement, including packaging, handling, labeling, marking, placarding, operational standards, and highway routing.

WORKER SAFETY

The U.S. Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) requires that workers be informed of the hazards associated with the materials they handle. For instance, manufacturers must appropriately label containers, material safety data sheets must be available in the workplace, and employers must properly train workers. Workers at hazardous waste sites must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response regulations (29 CFR 1910.120).

The OSHA Bloodborne Pathogens Standard requires the use of universal precautions (handling all human blood and certain body fluids as if they contain infectious agents) in the workplace.

ASBESTOS AND LEAD

Renovation and demolition of asbestos contaminated buildings is subject to the U.S. EPA National Emissions Standards for Hazardous Air Pollutants and OSHA worker health and safety regulations. Asbestos is the common name for a variety of naturally occurring, fibrous silicate minerals mined for uses including thermal insulation, acoustic insulation, and fireproofing. When asbestos is inhaled it may become lodged in the lungs. Resulting health effects include asbestosis, characterized by irritation and scarring of lung tissue; mesothelioma, a rare form of cancer that targets the lung, chest, abdomen, and heart; and lung cancer (U.S. EPA 2013b).

The U.S. EPA regulates environmental lead through several statutes, including the Toxic Substances Control Act, RCRA, and EPCRA. OSHA regulates workplace lead exposure. In adults, lead poisoning can cause reproductive problems, high blood pressure, hypertension, nerve disorder, memory and concentration problems, and muscle and joint pain. In children, high levels of lead absorption can result in developmental problems, such as damage to the brain, learning difficulties, slowed growth, headaches, and hearing problems (U.S. EPA 2013c).

SAFE DRINKING WATER ACT

Under the Safe Drinking Water Act (Public Law 93-523), passed in 1974, the U.S. EPA regulates contaminants of concern to domestic water supply. Contaminants of concern relevant to domestic water supply are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by the U.S. EPA's primary and secondary maximum contaminant levels (MCLs), which are applicable to treated water supplies delivered to a distribution system. MCLs and the process for setting these standards are reviewed triennially. Amendments to the Safe Drinking Water Act enacted in 1986 established an accelerated schedule for setting MCLs for drinking water.

The U.S. EPA has delegated to the California Department of Public Health (CDPH) the responsibility for administering California's drinking-water program. CDPH is accountable to the U.S. EPA for program implementation and for adopting standards and regulations that are at least as stringent as those developed by the U.S. EPA. The applicable state primary and secondary MCLs are set forth in Title 22, Division 4, Chapter 15, Article 4 of the California Code of Regulations.

STATE

CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

The California Department of Toxic Substances Control (DTSC), a division of the California Environmental Protection Agency (Cal/EPA), has primary regulatory responsibility over hazardous materials in California, working in conjunction with the U.S. EPA to enforce and implement hazardous materials laws and regulations. DTSC can delegate enforcement responsibilities to local jurisdictions. The hazardous waste management

program enforced by DTSC was created by the Hazardous Waste Control Act (California Health and Safety Code, Section 25100 et seq.), which is implemented by regulations described in California Code of Regulations (CCR) Title 26. The state program thus created is similar to but more stringent than the federal program under RCRA. The regulations list materials that may be hazardous and establish criteria for their identification, packaging, and disposal. Environmental health standards for management of hazardous waste are contained in CCR Title 22, Division 4.5. In addition, as required by California Government Code Section 65962.5, DTSC maintains a Hazardous Waste and Substances Site List for the state, called the Cortese List.

HAZARDOUS MATERIALS HANDLING AND TRANSPORT

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires preparation of hazardous materials business plans and disclosure of hazardous materials inventories. A business plan includes an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Statewide, DTSC has primary regulatory responsibility for management of hazardous materials, with delegation of authority to local jurisdictions that enter into agreements with the state. Local agencies are responsible for administering these regulations.

Several state agencies regulate the transportation and use of hazardous materials to minimize potential risks to public health and safety, including Cal/EPA and the California Emergency Management Agency. The California Highway Patrol and California Department of Transportation enforce regulations specifically related to the transport of hazardous materials. Together, these agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roadways.

HAZARDOUS WASTE CONTROL

The Hazardous Waste Control Act regulates the generation, treatment, storage, and disposal of hazardous waste. Hazardous waste is any material or substance that is discarded, relinquished, disposed of, or burned, or for which there is no intended use or reuse, and the material or substance causes or substantially contributes to an increase in mortality or illness; or the material or substance poses a substantial present or potential hazard to human health or the environment. These materials or substances include spent solvents and paints (oil and latex), used oil, used oil filters, used acids and corrosives, and unwanted or expired products (e.g., pesticides, aerosol cans, cleaners). If the original material or substance is labeled *Danger*, *Warning*, *Toxic*, *Caution*, *Poison*, *Flammable*, *Corrosive*, or *Reactive*, the waste is very likely to be hazardous.

REGULATORY DEFINITIONS FOR HAZARDOUS WASTE

“Hazardous waste” is a subset of hazardous materials and is defined as “wastes that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may either cause, or significantly contribute to, an increase in mortality or an increase in serious illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed” (Health and Safety Code, Section 25517). Hazardous materials can be categorized as nonradioactive chemicals materials, radioactive materials, and biohazardous materials. Nonradioactive chemical materials typically fall within the definitions of hazardous materials and hazardous waste, as defined above. Radioactive and biohazardous materials are further defined below:

- ▲ Biohazardous materials are materials that contain certain infectious agents (microorganisms, bacteria, molds parasites, viruses) that normally cause or significantly contribute to increased human mortality, or organisms that are capable of being communicated by invading and multiplying in body tissues. (*Health and Safety Code, Section 117635*)

- ▲ Medical waste includes both byproducts of biohazardous materials and devices capable of cutting or piercing (commonly referred to as “sharps”), such as hypodermic needles, razor blades, and broken glass, resulting from the diagnosis, treatment, or immunization of human beings, or research pertaining to these activities. (*Health and Safety Code, Section 117690*)
- ▲ Radioactive materials contain atoms with unstable nuclei that spontaneously emit ionizing radiation to increase their stability. Radioactive wastes are radioactive materials that are discarded, including waste in storage, or abandoned. (*Health and Safety Code, Section 114710*)

GOVERNMENT CODE SECTION 65962.5

The provisions of Government Code Section 65962.5 are commonly referred to as the “Cortese List.” The Cortese List is a planning document used by state and local agencies to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires Cal/EPA to develop and updated Cortese List annually, at minimum. DTSC is responsible for a portion of the information contained in the Cortese List. Other California state and local government agencies are required to provide additional hazardous material release information for the Cortese List.

MULTI-HAZARD MITIGATION PLAN

The California Emergency Management Agency adopted the 2007 State Hazard Mitigation Plan on October 8, 2007. This plan is the official statement of California’s statewide hazard mitigation goals, strategies, and priorities. Hazard mitigation can be defined as any action taken to reduce or eliminate long-term risk to life and property by natural and human caused disasters. The plan, required under federal law, includes chapters on hazard assessment, local hazard mitigation planning, and mitigation strategy and must be updated every three years.

PUBLIC HEALTH AND WORKER SAFETY REQUIREMENTS

The California Human Health Screening Levels (CHHSLs) are concentrations of 54 hazardous chemicals in soil or soil gas that Cal/EPA considers to be below thresholds of concern for risks to human health. The CHHSLs were developed by the Office of Environmental Health Hazard Assessment on behalf of Cal/EPA. The thresholds of concern used to develop the CHHSLs are an excess lifetime cancer risk of one-in-a-million and a hazard quotient of 1.0 for noncancer health effects. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by the U.S. EPA and Cal/EPA.

The California Division of Occupational Safety and Health (Cal/OSHA) is responsible for developing and enforcing workplace safety standards and assuring worker safety in the handling and use of hazardous materials. Among other requirements, Cal/OSHA requires many entities to prepare injury and illness prevention plans and chemical hygiene plans, and provides specific regulation to limit exposure of construction workers to lead.

The California Department of Public Health (formerly California Department of Health Services) regulates the generation, handling, storage, treatment, and disposal of medical waste in accordance with the California Medical Waste Management Act (California Health and Safety Code, Sections 117600–118360). This law requires medical waste generators to register with the CDPH, Medical Waste Management Program, and submit a medical waste management plan to the local enforcement agency.

The use of radiologic materials is governed by the Radiologic Health Branch of the California Department of Public Health’s Food, Drug, and Radiation Safety Division. The branch enforces the following laws and regulations designed to protect the public, radiation workers, and the environment:

- ▲ Radiation Control Law (Health and Safety Code, Section 114960 et seq.);

- ▲ Radiologic Technology Act (Health and Safety Code, Section 27[f]); and
- ▲ Nuclear Medicine Technology Certification (Health and Safety Code, Sections 107150–107175).

Regulations implementing the above laws are in CCR Title 17, Division 1, Chapter 5, Subchapters 4.0, 4.5, and 4.6.

The Dangerous Weapons Control Laws (Title 2 of Part 4 of the California Penal Code), enforced by the California Department of Justice, lay out specific “safe storage” requirements for firearms and other weapons.

STATE WATER RESOURCES CONTROL BOARD AND REGIONAL WATER QUALITY CONTROL BOARDS

The State Water Resources Control Board (SWRCB) and nine regional water quality control boards (RWQCBs) are responsible for ensuring implementation and compliance with the provisions of the federal Clean Water Act and the Porter-Cologne Act of 1969. The Porter-Cologne Act is California’s statutory authority for the protection of water quality. Along with the SWRCB and RWQCBs, water quality protection is the responsibility of numerous water supply and wastewater management agencies, as well as city and county governments, and requires the coordinated efforts of these various entities. Individual RWQCBs are responsible for identifying, monitoring, and cleaning up leaking underground storage tanks (LUSTs). The SFRWQCB’s underground storage tank (UST) cleanup unit provides technical and regulatory oversight for the investigation and cleanup of sites with leaks from USTs. LUSTs are an important threat to groundwater and pose a potential threat to human health, safety, and the environment.

FIRE HAZARD SEVERITY ZONES

Sections 4201–4204 of the California Public Resources Code and Sections 51175–51189 of the Government Code require identification of fire hazard severity zones within the state of California. Fire prevention areas considered to be under state jurisdiction are referred to as “state responsibility areas.” In state responsibility areas, the California Department of Forestry and Fire Protection (CAL FIRE) is required to delineate three hazard ranges: moderate, high, and very high; whereas “local responsibility areas,” which are under the jurisdiction of local entities (e.g., cities, counties), are required to only identify very high fire hazard severity zones. The hazard ranges are measured quantitatively, based on vegetation, topography, weather, crown fire potential (a fire’s tendency to burn upward into trees and tall brush), and ember production and movement within the area of question.

LOCAL

NAPA COUNTY GENERAL PLAN

The Safety Element of the *Napa County General Plan* (2008) contains the following policies that are potentially pertinent to the proposed project in regards to hazards and hazardous materials:

- ▲ **Policy SAF-3.** The County shall evaluate potential safety hazards related when considering General Plan Amendments, rezonings, or other project approvals (including but not limited to new residential developments, roads or highways, and all structures proposed to be open to the public and serving 50 persons or more) in areas characterized by: 1) slopes over 15%, 2) identified landslides, 3) floodplains, 4) medium or high fire hazard severity, 5) former marshlands, or 6) fault zones.
- ▲ **Policy SAF-20.** All new development shall comply with established fire safety standards. Design plans shall be referred to the appropriate fire agency for comment as to:
 - // Adequacy of water supply.
 - // Site design for fire department access in and around structures.

- // Ability for a safe and efficient fire department response.
 - // Traffic flow and ingress/egress for residents and emergency vehicles.
 - // Site-specific built-in fire protection.
 - // Potential impacts to emergency services and fire department response.
- ▲ **Policy SAF-31.** All development projects proposed on sites that are suspected or known to be contaminated by hazardous materials and/or are identified in a hazardous material/waste search shall be reviewed, tested, and remediated for potential hazardous materials in accordance with all local, state, and federal regulations.

CERTIFIED UNIFIED PROGRAM AGENCY

Senate Bill 1082 (1993) established the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program. The Unified Program consolidates, coordinates, and makes consistent hazardous materials and hazardous waste program elements. A Certified Unified Program Agency (CUPA) is a county, city, or joint powers agency approved and designated by Cal/EPA to implement the Unified Program and is responsible for all six program elements of the Unified Program within its jurisdiction. The Napa County Planning, Building, & Environmental Services Department (PBES) is the CUPA for Napa County, including all of its cities. As the CUPA, the Napa County PBES administers the following Unified Programs:

- ▲ Hazardous Materials Release Response Plans and Inventory (Business Plan) Program,
- ▲ California Accidental Release Prevention Program,
- ▲ Underground Storage Tank Program,
- ▲ Hazardous Waste Generator and Hazardous Waste On-Site Treatment Programs, and
- ▲ Above Ground Storage Tank Program (Spill Prevention, Control and Countermeasure Plans).

NAPA COUNTY CODE, UNDERGROUND STORAGE OF HAZARDOUS SUBSTANCES (CHAPTER 16.20)

In conformity with the provisions of Division 20, Chapter 6.7 (commencing with § 25280) of the California Health and Safety Code and regulations adopted by the SWRCB (in conformity with Title 23, Subchapter 16 of the California Code of Regulations), Napa County Code contains a program to prevent contamination from and improper storage of hazardous substances stored underground.

NAPA OPERATIONAL AREA HAZARD MITIGATION PLAN

In 2004, Napa County adopted the *Napa Operational Area Hazard Mitigation Plan (OAHMP)*, which includes mitigation for addressing the most significant hazards in the County (floods, earthquakes, wildland interface fires, and terrorism and technological hazards). The OAHMP's Mitigation Strategy includes goals, programs, objectives and action items that help to ensure effective emergency response to significant hazards. Objectives and action items in the OAHMP include community education programs, post-emergency power generation plans, remote area detection systems, and communication and response systems that contribute to effective emergency response in the County (Napa County 2004).

The OAHMP is required to be updated every 5 years; the last update was initiated in 2009 and the updated OAHMP was submitted to State and Federal review parties in 2010. As part of the adoption process, the California Emergency Management Agency and the Federal Emergency Management Agency (FEMA) must review and approve the content and the planning process used to develop the OAHMP. The State approved the OAHMP; however, FEMA "rejected" it through a number of draft submittal processes. Over the last year, the County has been working with FEMA to improve plan content and documentation.

3.5.2 ENVIRONMENTAL SETTING

PROJECT SITE

The Boca parcel is approximately 55 acres, and is currently leased out for a number of uses. The Boca parcel is occupied by at least three industrial buildings, industrial and/or commercial manufacturing purposes, and paved areas in the western portion; unimproved roads and undeveloped land in the eastern portion; and a concrete apron that appears to have been used as a working surface for site activities in the northern portion. The three industrial buildings were constructed by Basalt Rock Company between 1948 and 1982. Several smaller structures are located throughout the Boca parcel.

The Pacific Coast parcel is approximately 27 acres, and is currently used by Pacific Coast Supply for warehousing of retail and wholesale building materials, including roofing, insulation, drywall, waterproofing, acoustical, and masonry products. The Pacific Coast parcel contains a complex of eight abandoned industrial buildings; two small modern buildings; and a rectangular, open bay, partitioned sand/gravel storage area. A majority of the western portion of the Pacific Coast parcel has in the past or continues to be used for industrial and/or commercial manufacturing purposes. The northern half of the Pacific Coast parcel is mostly aggregate fill material with some undeveloped land.

Domestic water is currently supplied to the project site (both parcels) from a private water system that uses local groundwater wells.

PHASE I ENVIRONMENTAL SITE ASSESSMENT

In early 2012, a preliminary and limited Phase I Environmental Site Assessment (ESA) was conducted for the Boca parcel by EBA Engineering (Napa County 2012). Because no legal address appears to be associated with the Boca parcel, the environmental record search included two addresses associated with the Boca parcel, 2301 and 2303 Napa Vallejo Highway. Based on this report, it appears that the 2301 Napa Vallejo Highway address is also associated with the Pacific Coast parcel. It should be noted that 2301 Napa Vallejo Highway is also associated with several neighboring parcels and historic properties in the immediate area of the project site; therefore, it is difficult to discern which listings apply to the project site at this time.

The environmental record search identified both of these addresses on several environmental databases related to the historic quarry operations and the use and/or generation of hazardous materials or liquid by various site owners and/or tenants over time. Both addresses were listed in the record search under the Hazardous Waste Information System (HAZNET) and/or Small Quantity Generator (SQG) database under various business names. As defined in 40 CFR 260.10, a SQG generates more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month. Information reviewed from DTSC's database indicates 13 U.S. EPA identification listings under the address 2301 Napa Vallejo Highway. Of these listings, three were considered active in early 2012 under the operations of Thompson Metal Fabrication Inc., Syar, and Superior Equipment Company Inc. There are also active U.S. EPA identification listings for 2303 Napa Vallejo Highway under the operations of Boca Company LLC, Rammed Earth Works, and R & M Grading, Inc. (Napa County 2012). Of these listings, there were no violations reported except for at the Basalt Rock/Rock Company. The Phase I ESA provides minimal detail related to these violations, indicating that they occurred on July 21, 1988, and consisted of the following areas of violation: LDR-General and Generators – General. No additional detail is available regarding this listing; however, subsequent property owners have occupied the site and no additional remediation actions have been noted on agency databases; therefore, it is likely that the issue has been resolved (Napa County 2012).

Waste discharge requirements (WDRs) issued by the SFRWQCB are associated with the address 2301 Napa Vallejo Highway under Basalt Rock Company. Files reviewed at the Napa County PBES included information related to WDRs for Basalt Rock Company regarding the discharge of wash water to the Napa River from a

settling pond. Several complaints were noted in regulatory agency files with regard to the operation of the settling pond and discharge of wastewater to the Napa River. The complaints appear to have been resolved through the actions of regulatory agencies requirements to the operators at the project site. The settling pond was located on the neighboring property east of the Boca parcel, however due to the common ownership and operation of these properties together at that time, it is unknown if activities at the project site contributed to or were associated with the operation and/or discharge from the pond (Napa County 2012:8).

Historic information reviewed at the Napa County Historical Museum for the Basalt Rock Quarry indicates that the largest building on the Boca parcel was used for the production of precast panels for concrete homes and buildings. Information indicates that the panels were cured in pits located within the building that measured 65 feet long by 8 feet wide by 13 feet deep (Napa County 2012:8).

Aerial photos indicate two aboveground fuel tanks (AGTs) located in the central portion of the Boca parcel. Due to restricted access to the site, the current use of these AGTs or other tanks on the site is unknown. The 2301 Napa Vallejo Highway address was identified under Basalite Block/Rock for having a 10,000-gallon diesel underground fuel storage tank (UST) and Basalt Rock Division of Dillingham for having at least two 500-gallon waste oil USTs near a maintenance shop. (Napa County 2012:8). The Pacific Coast parcel is listed in databases and agency files for having completed an investigation related to a former UST. A 10,000-gallon diesel UST was reportedly removed from the site in 1994 and analytical results indicated impacts to soil and groundwater in the area of the UST, dispenser island, and associated piping. Subsurface investigation activities were conducted to determine the extent of impacts resulting from the former UST and groundwater monitoring was conducted from 1996 to 2001. The monitoring indicated the presence of petroleum hydrocarbons in groundwater at the Pacific Coast parcel and subsequently concluded that environmental impacts to groundwater were naturally attenuating and that no additional monitoring was required. The Napa County PBES concurred and issued a remedial action completion letter for the Pacific Coast site in January 2002 (Napa County 2012:8, 10).

ADDITIONAL DATABASE SEARCHES

The U.S. EPA's Envirofacts database was searched to confirm the information presented in the 2012 Limited Phase I ESA prepared for the project area, and to identify potential hazardous contamination sites within the project site and in the immediate surrounding area. The Envirofacts database presents information from several regulatory agencies and databases. Under the address 2301 Napa Vallejo Highway, Basalite Block/Rock, Syar, and Syar Shooting Range are listed as active RCRA SQGs of hazardous wastes. The database indicates site cleanup was certified in 2005 at Syar Quarry Shooting Range. No active RCRA generators of hazardous waste were associated with 2303 Napa Vallejo Highway (U.S. EPA 2013d).

DTSC's EnviroStor database was also searched to confirm the information presented in the 2012 Limited Phase I ESA prepared for the Boca parcel. EnviroStor maps properties regulated by DTSC and identifies where extensive investigation and/or cleanup actions have been completed. Four listings under the 2301 Napa Vallejo Highway address are listed in the Envirostor database. Syar is listed as a LUST cleanup site and a Spills, Leaks, Investigation, and Cleanups (SLIC) site that contained two USTs (one removed and one closed in place in 1998) and three aboveground storage tanks (ASTs) (removed in 2003). These two cleanup cases were completed and closed in March 2007 and associated groundwater monitoring wells were destroyed in April 2007. Under the same address, Pacific Coast Supplies is listed as a LUST cleanup site with freon as the potential contaminant of concern and soil as the affected media on the site. As indicated above, this cleanup case was completed and closed in January 2002. Syar Industries Shooting Range, located west of Napa Vallejo Highway, is listed as a voluntary cleanup site. The Basalt Rock Company began operations at the Napa Rock Quarry (Quarry) in 1924. Operations included a rock quarry and aggregate manufacturing facilities. Syar purchased the Quarry from Basalt Rock Company in 1986. Syar has continued operations since the acquisition of the Quarry. Certification of completion of all remedial actions outlined in the Final Removal Action Workplan was completed in March 2005

(DTSC 2013). There are no DTSC listings associated with the 2303 Napa Vallejo Highway address or other properties located adjacent to the project site.

WILDFIRE RISK

The term “wildland/urban interface” was coined in 1976 by CAL FIRE to identify the condition where highly flammable native vegetation meets high value structures, primarily residences. In most cases, there is not a clearly defined boundary or interface between the structures and vegetation that present the hazard. Historically, residences in these ill-defined wildland/urban intermix boundary areas were particularly vulnerable to wildfires because they were constructed with a reliance on fire department response for protection rather than fire resistance, survivability and self-protection. However, in the recent past, there has developed a greater appreciation for the need to regulate development in these hazardous areas as a result of a number of serious statewide wildland fire conflagrations.

The severity of the wildfire hazard is determined by the relationship between three factors: fuel classification, topographic slope and critical fire weather frequency. Napa County’s Fire Hazard Areas generally fall into the Medium Fuel category. Critical fire weather conditions occur in periods of relative low humidity, high heat and high winds. Napa County typically has critical fire weather from two to seven days annually. Based on CAL FIRE’s map of Fire Hazard Severity Zones within State Responsibility Areas, the project site is classified as having a “Moderate” fire hazard rating (CAL FIRE 2007).

3.5.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

METHODS AND ASSUMPTIONS

This analysis considers the range and nature of foreseeable hazardous materials use, storage, and disposal resulting from the project and identifies the primary ways that these hazardous materials could expose individuals or the environment to health and safety risks. Local and State agencies would be expected to continue to enforce applicable requirements to the extent that they do so now.

The following reports documenting potential hazardous conditions at the project site were reviewed for this analysis:

- ▲ Limited Phase I Environmental Site Assessment, APN 046-370-024, Napa, California, February 2012, by EBA Engineering;
- ▲ preliminary design plans for the proposed project; and
- ▲ available literature, including databases and maps published by County, State, and Federal agencies.

The information obtained from these sources was reviewed and summarized to establish existing conditions and to identify potential environmental effects, based on the standards of significance presented in this section. In determining the level of significance, the analysis assumes that development of the project would comply with relevant federal, State, and local ordinances and regulations.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, a hazards and hazardous materials impact is considered significant if implementation of the proposed project would:

- ▲ create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

- ▲ create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- ▲ emit hazardous emissions or require handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- ▲ be located on a site that is included on a list of hazardous materials sites compiled pursuant to Section 65962.5 of the California Government Code and, as a result, would create a significant hazard to the public or the environment;
- ▲ result in a safety hazard for people residing or working in the project area, where the project is located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public-use airport;
- ▲ result in a safety hazard for people residing or working in the project area, where the project is located near a private airstrip;
- ▲ impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- ▲ expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

Construction activities would involve the use of hazardous materials such as solvents, gasoline, asphalt, and oil. Existing structures would be demolished to allow for construction of new facilities and could contain hazardous building materials, such as lead-based paint (LBP), asbestos containing materials (ACMs), or PCBs, which could potentially expose and adversely affect workers, the public, or the environment as a result of improper handling or use; accident; environmentally unsound disposal methods; or fire, explosion, or other emergencies, resulting in adverse health effects. During operations, the new jail facilities may use solvents, cleaning agents, gasoline, and other hazardous materials. However, all allowable uses would be subject to compliance with federal, state, and local hazardous materials regulations, and would be monitored by the state (e.g., Cal/OSHA and DTSC) and/or County. Therefore, it is not anticipated that the routine use of these materials handled in accordance with these laws and regulations would create a significant hazard to the public or the environment. This issue is not discussed further in this DEIR.

Napa Valley Community College is located approximately 0.15 mile northwest of the project site. As previously discussed, all allowable uses of hazardous materials would be subject to compliance with federal, state, and local hazardous materials regulations, and would be monitored by the state (e.g., Cal/OSHA and DTSC) and/or County. Therefore, it is not anticipated that the routine use of these materials handled in accordance with applicable laws and regulations would create a significant hazard to the public or the environment. Therefore, this issue is not discussed further in this DEIR.

The project site contains sites identified as meeting the “Cortese List” requirement, due to leaking USTs at Pacific Coast Supplies and Syar. Both sites have completed remediation and are considered to be “closed” cases (SWRCB 2013). Therefore, this issue is not discussed further in this DEIR.

Based on a review of available maps and information, no private airstrips are located in the immediate vicinity of the proposed project site. The nearest airport is located approximately three miles southwest of the project site, which is located outside of the Napa County Airport land use compatibility plan area (Napa County 1999:3-17). As such, no safety hazards related to private airstrips or public airports are anticipated. This issue is not evaluated further in this DEIR.

With respect to wildland fire risk, the project site is located within a State Responsibility Area classified as a Moderate Hazard Severity Zone (CAL FIRE 2007), which is the lowest fire hazard designation provided by Napa

County. The majority of the project site is developed. The site is bound by development, including the Napa State Hospital, Syar Napa Quarry, vineyard, and the Napa-Vallejo Highway/SR 221, with minimal frontage to natural space at the northeastern corner of the project site. Based on the location of the proposed development, the construction and operation of the jail and ancillary facilities are not anticipated to pose a greater risk of fire that would expose people or structures to injury or loss. The project would be required to comply with Policy SAF-20 of the *Napa County General Plan* (2008), which requires all new development in the County to comply with established fire safety standards. Therefore, project implementation would not expose people or structures to a significant wildland fire risk, and this issue is not evaluated further in this DEIR.

IMPACT ANALYSIS

Impact 3.5-1	Exposure of Construction Workers and the Environment to Hazardous Materials. A 2012 environmental record search identified two addresses associated with the project site on several environmental databases related to historic quarry operations and the use and/or generation of hazardous materials by various site owners and/or tenants over time. Both addresses were listed in the record search under the HAZNET and/or Small Quantity Generator (SQG) database under various business names. Currently, the project site is used for various industrial purposes. Based on prior history of the project site and surrounding area, proposed demolition, excavation, and facility construction activities on the project site could result in the exposure of construction workers and the general public to previously undiscovered hazardous materials contamination. This impact is considered <i>potentially significant</i> . This impact could be reduced to a less-than-significant level through implementation of Mitigation Measure 3.5-1.
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Construction-related activities, such as the use of equipment that contains hazardous materials (e.g., diesel-fueled equipment), the excavation and transportation of contaminated soil, and the demolition and renovation of existing aged structures, could expose construction workers and the environment to hazardous materials. Development of the new jail would involve grading, excavation, and building construction. Potential sources of hazardous materials that exist within the project site are described below.

Aerial photos indicate two AGTs located in the central portion of the Boca parcel. Due to restricted access to this parcel, the current use of these AGTs or other tanks within the parcel is unknown. In addition, four listings for previous cleanup sites under the 2301 Napa Vallejo Highway address are listed in the Envirostor database, three of which may be located within the boundaries of the project site (Boca and Pacific Coast parcels). These cleanup sites include two LUST cleanup sites, and one SLIC site that contained two USTs (one removed and one closed in place in 1998) and three ASTs (removed in 2003). All of these cleanup site cases have been completed and closed. Because a portion of the project site (Pacific Coast parcel) was unavailable for inspection and a Phase I ESA has not been performed for this parcel, it is unknown whether past operations at this parcel have resulted in any site contamination issues that could result in an adverse environmental condition. Further, due to the historic quarry operations and the past use and/or generation of hazardous materials at the project site, there is potential for the presence of undiscovered hazardous materials at the project site that could be uncovered during site construction activities.

Because of the age of the existing industrial buildings and structures, there is a possibility that LBP and ACM may be present in building materials. In addition, electrical switches, light ballasts, and transformers containing PCBs may also be present. If allowed to deteriorate, these materials could result in localized lead and asbestos contamination. Further, construction activities could encroach upon structures containing these materials, which could cause a release to the environment. These materials could also become airborne during demolition and construction activities and create a hazard for construction workers at the project site. Exposure to asbestos and/or lead as well as PCBs could lead to adverse health effects.

With the proposed demolition of existing facilities at the project site and excavation of the site for utilities, trenching, backfilling, and construction of proposed facilities associated with project development, there is potential for construction workers and the general public to be exposed to previously undiscovered hazardous materials contamination. These hazardous materials could include petroleum hydrocarbons, pesticides, herbicides, and fertilizers; freon; contaminated debris; elevated levels of chemicals that could be hazardous; or hazardous substances that could be inadvertently spilled or otherwise spread. Release and/or exposure to hazardous materials could result in a safety hazard for people residing or working in the project area.

Because soils, groundwater, and existing structures at the project site could contain unknown hazardous materials associated with the historic quarry operations and the past industrial use of the site, as well as hazardous building materials such as lead and asbestos, construction workers and the environment could be exposed to these materials during project construction and operation. This impact is considered **potentially significant**.

Mitigation Measure 3.5-1: Prepare and Implement Health and Safety Plan

To avoid health risks to construction workers, the County will prepare a Health and Safety Plan prior to initiating any demolition, grading, or other earthmoving activities. This plan will outline measures that will be employed to protect construction workers and the public from exposure to hazardous materials during demolition and construction activities.

These measures could include, but would not be limited to, posting notices, limiting access to the site, air monitoring, watering, and installation of wind fences. Contractors will be required to comply with state health and safety standards for all demolition work. If necessary, this will include compliance with OSHA and Cal-OSHA requirements regarding exposure to asbestos and lead-based paint.

In addition, the plan shall include procedures to follow in the event that contaminated soil and/or groundwater or other hazardous materials are generated or encountered during construction. Such procedures could include, but would not be limited to, the following:

- › all work shall be halted in the affected area and the type and extent of the contamination shall be determined.*
- › the project contractor will notify the Napa County Environmental Health Division if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater) is encountered during excavation.*
- › any contaminated areas will be remediated in accordance with recommendations made by the Napa County Environmental Health Division, SFRWQCB, and DTSC.*
- › remediation activities could include but would not be limited to the excavation of contaminated soil areas and hauling of contaminated soil materials to an appropriate off-site disposal facility, mixing of on-site soils, and capping (i.e., paving or sealing) of contaminated areas.*

Before demolition of any structure, or removal of building materials, the County will hire a qualified consultant to investigate whether any building materials to be removed contain lead or asbestos-containing materials that could become friable or mobile during demolition/construction activities. If found, the lead- or asbestos-containing materials will be removed by an accredited inspector in accordance with U.S. EPA and Cal-OSHA standards. In addition, all activities (construction or demolition) in the vicinity of these materials will comply with Cal-OSHA asbestos worker construction standards. The lead- or asbestos-containing materials will be disposed of properly at an appropriate off-site disposal facility.

Implementation of this mitigation measure would reduce potentially significant impacts associated with the potential exposure of construction workers and the general public to previously undiscovered hazardous materials contamination to a **less-than-significant** level because the County will prepare a site Health and Safety Plan; investigate the extent to which soil and/or groundwater has been contaminated from past operations; and identify in the Health and Safety Plan any necessary remediation activities appropriate for proposed land uses, including appropriate removal of any ACMs or LBPs, excavation and removal of on-site contaminated soils, and redistribution of clean fill material on the project site.

Impact 3.5-2	<p>Impacts From Implementation Of Or Physical Interference With An Adopted Emergency Response Plan Or Emergency Evacuation Plan. The specific access and circulation plan for the proposed project is still in the design phase and a site-specific emergency response plan has not been prepared. Therefore, the project’s compatibility with implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan is currently unknown. This would be a potentially significant impact. This impact could be reduced to a less-than-significant level through implementation of Mitigation Measure 3.5-2.</p>
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As noted above, the OAHMP includes goals, programs, objectives and action items that help to ensure effective emergency response to significant hazards. Objectives and action items in the OAHMP include community education programs, post-emergency power generation plans, remote area detection systems, and communication and response systems that contribute to effective emergency response in the County (Napa County 2004).

The specific access and circulation plan for the proposed project is still in the preliminary design phase and a site-specific emergency response plan has not been prepared. Therefore, the project’s compatibility with adopted emergency response plans and emergency evacuation plans is unknown. This would be a **potentially significant** impact.

Mitigation Measure 3.5-2: Prepare Emergency Response Plan Consistent with the County’s OAHMP

The County will prepare an emergency response plan for the new jail in coordination with first responders and other emergency agencies. The plan will include an evacuation plan for the site that will detail what parties are responsible for specific response actions. The plan will also identify applicable mitigation from the OAHMP; this may include community education programs, post-emergency power generation plans, remote area detection systems, and communication and response systems that contribute to effective emergency response in the County. The emergency response plan for the new jail will be approved by the Napa County PBES and the Napa County Fire Chief prior to issuance of occupancy permits.

Implementation of this mitigation measure would reduce the project’s potential impacts to adopted emergency response plans and evacuation plans to a **less-than-significant** level because the County would prepare a site-specific emergency response plan that would be consistent with the County’s OAHMP.

3.6 HYDROLOGY AND WATER QUALITY

This section describes the existing hydrological setting for the project site, including runoff, storm drainage, and flood control. Regulations and policies affecting local hydrology and water quality are discussed, and impacts are identified that may result from project implementation. Mitigation measures are recommended to reduce potential impacts, where appropriate. Impacts associated with water supply (including surface supplies and groundwater) are discussed in Section 3.10, “Utilities and Service Systems.” Impacts associated with potential exposure of construction workers to contaminated groundwater are addressed in Section 3.5, “Hazards and Hazardous Materials.”

3.6.1 REGULATORY SETTING

Numerous federal, state, and local laws, regulations, and policies define the framework for regulating water quality in the project area. Water quality in California is regulated through the Federal Clean Water Act (CWA), which is managed by the U.S. Environmental Protection Agency (U.S. EPA), with implementation delegated to the SWRCB and nine RWQCBs. Water quality at the project site is regulated primarily by the SFRWQCB. The following provides a description of the water quality requirements applicable to the project. Flood protection guidance is provided primarily by the Federal Emergency Management Agency (FEMA) and is implemented at the state and local levels through legislation and local flood protection ordinances.

FEDERAL

CLEAN WATER ACT

Overview

The CWA is the primary federal statute governing the protection of water quality and was established to provide a comprehensive program to protect the nation’s surface waters. U.S. EPA is the federal agency with primary authority for implementing regulations adopted pursuant to the CWA. The basis of the CWA consists of the Federal Water Pollution Prevention and Control Act (Water Pollution Act) passed in 1948. The Water Pollution Act was substantially reorganized and expanded in subsequent amendments passed in 1972 and in 1977, when “Clean Water Act” became its common name. The Water Pollution Act required the U.S. EPA to establish nationwide effluent standards on an industry-by-industry basis. The 1972 amendment established the National Pollutant Discharge Elimination System (NPDES) program. As a result of the reauthorization of the CWA in 1987, Sections 402(p) through 405 were added. One of the results of the new sections was the creation of a framework for regulating discharges under the NPDES permit program, which is discussed later in this section.

Under federal law, U.S. EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations (CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question, and (2) criteria that protect the designated uses. Section 304(a) requires U.S. EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. U.S. EPA has designated the SWRCB and its nine RWQCBs with the authority to identify beneficial uses and adopt applicable water quality objectives. U.S. EPA has delegated to the State of California the authority to implement and oversee most of the programs authorized or adopted for CWA compliance through the Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act), described below.

Section 303(d) List of Impaired Water Bodies

Section 303(d) of the CWA requires states to identify water bodies that do not meet water quality objectives and are not supporting their beneficial uses. Each state must submit an updated list, called the 303(d) list, to U.S. EPA periodically. In addition to identifying the water bodies that are not supporting beneficial uses, the list also identifies the pollutant or stressor causing impairment, and establishes a priority for developing a control plan to address the impairment. On June 28, 2007, U.S. EPA gave final approval to California's 2006 Section 303(d) List of Water Quality Limited Segments. The 303(d) list includes the Napa River for nutrients, pathogens, and sedimentation/siltation.

Safe Drinking Water Act

Under the Safe Drinking Water Act (Public Law 93-523), passed in 1974, U.S. EPA regulates contaminants of concern to domestic water supply. Contaminants of concern relevant to domestic water supply are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by U.S. EPA's primary and secondary maximum contaminant levels (MCLs), which are applicable to treated water supplies delivered to a distribution system. MCLs and the process for setting these standards are reviewed triennially. Amendments to the Safe Drinking Water Act enacted in 1986 established an accelerated schedule for setting MCLs for drinking water.

U.S. EPA has delegated to the CDPH the responsibility for administering California's drinking-water program. CDPH is accountable to U.S. EPA for program implementation and for adopting standards and regulations that are at least as stringent as those developed by U.S. EPA. The applicable state primary and secondary MCLs are set forth in Title 22, Division 4, Chapter 15, Article 4 of the California Code of Regulations.

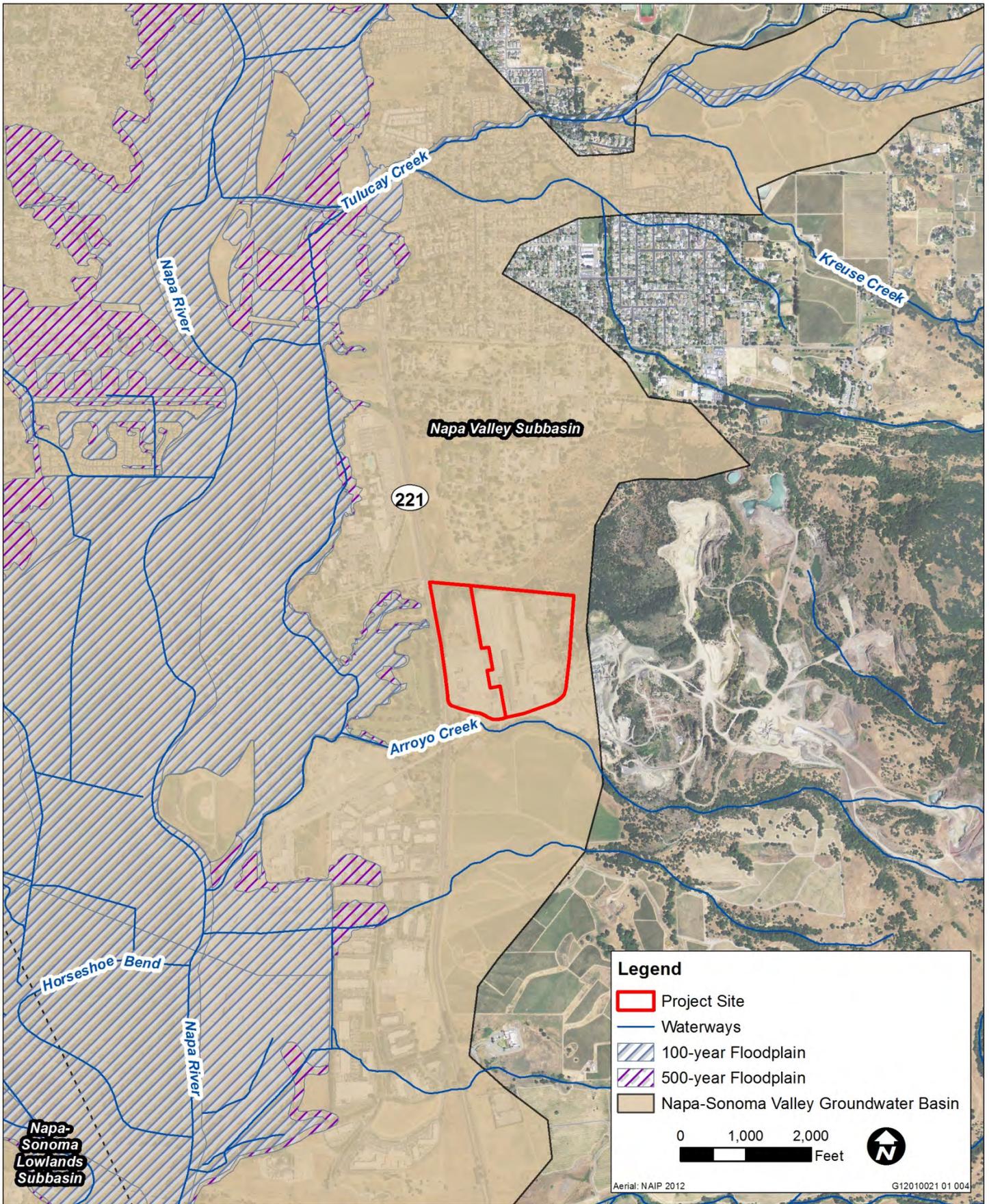
FEDERAL EMERGENCY MANAGEMENT AGENCY

In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer funded disaster relief for flood victims and the increasing amount of damage caused by floods. FEMA administers the NFIP to provide subsidized flood insurance to communities that comply with FEMA regulations to limit development in floodplains. FEMA also issues flood insurance rate maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. FEMA has established a minimum level of flood protection for new development as the 1-in-100 Annual Exceedance Probability (i.e., 100-year flood event). Participants in the NFIP must satisfy certain mandated floodplain management criteria. Flood zone areas in the vicinity of the project site are shown in Exhibit 3.6-1. Napa County participates in the NFIP.

STATE

TITLE 22 STANDARDS

Water quality standards are enforceable limits composed of two parts: (1) the designated beneficial uses of water and (2) criteria (i.e., numeric or narrative limits) to protect those beneficial uses. Municipal and domestic supply (MUN) is among the "beneficial uses" as defined in Section 13050(f) of the Porter-Cologne Act, which defines them as uses of surface water and groundwater that must be protected against water quality degradation. Maximum contaminant levels, MCLs, are components of the drinking water standards adopted by CDPH pursuant to the California Safe Drinking Water Act. California MCLs may be found in Title 22 of the California Code of Regulations (CCR), Division 4, Chapter 15, Domestic Water Quality and Monitoring. CDPH is responsible for CCR Title 22 (Article 16, Section 64449) as well, which also defines secondary drinking-water standards, established primarily for reasons of consumer acceptance (i.e., taste) rather than because of health issues.



Source: Data downloaded from Napa County in 2013; Adapted by Ascent Environmental in 2013

Exhibit 3.6-1

Drinking-water MCLs are directly applicable to water supply systems “at the tap” (i.e., at the point of use by consumers in their home, office, and other locations), and are enforceable by CDPH. California MCLs, both primary and secondary, are directly applicable to groundwater and surface water resources when they are specifically referenced as water quality objectives in the pertinent water quality control plan (basin plan). In such cases, MCLs become limits enforceable by the SWRCB and RWQCBs. When fully health protective, MCLs may also be used to interpret narrative water quality objectives prohibiting toxicity to humans in water designated as a source of drinking water (municipal and domestic supply [MUN]) in the basin plan.

PORTER-COLOGNE WATER QUALITY CONTROL ACT OF 1969

The Porter-Cologne Act of 1969 is California’s statutory authority for the protection of water quality. Under the Porter-Cologne Act, the state must adopt water quality policies, plans, and objectives that protect the state’s waters for the use and enjoyment of the people. The act sets forth the obligations of the SWRCB and nine RWQCBs to adopt and periodically update basin plans. Basin plans are the regional water quality control plans required by both the CWA and Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California.

The Porter-Cologne Act also requires waste dischargers to notify the RWQCBs of their activities through the filing of reports of waste discharge (RWD) and authorizes the SWRCB and RWQCBs to issue and enforce WDRs, NPDES permits, Section 401 water quality certifications, or other approvals. The RWQCBs also have the authority to issue waivers to RWD/WDRs for broad categories of “low threat” discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions.

SAN FRANCISCO BAY (REGION 2) WATER QUALITY CONTROL PLAN

The SWRCB and nine RWQCBs are responsible for ensuring implementation and compliance with the provisions of the CWA and the Porter-Cologne Act. Along with the SWRCB and RWQCBs, water quality protection is the responsibility of numerous water supply and wastewater management agencies, as well as city and county governments, and requires the coordinated efforts of these various entities.

The *San Francisco Bay (Region 2) Water Quality Control Plan (Basin Plan)* (SFRWQCB 2011) defines the beneficial uses, water quality objectives, implementation programs, and surveillance and monitoring programs for waters of the San Francisco Bay. State law defines beneficial uses as “domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves” (California Water Code Section 13050[f]). This basin plan contains specific numeric water quality objectives that are applicable to certain water bodies or portions of water bodies.

NPDES PERMIT SYSTEM AND WASTE DISCHARGE REQUIREMENTS FOR CONSTRUCTION

The 1972 amendment to the CWA established the NPDES permit program. The NPDES permit program outlined in the CWA contains effluent limitation guidelines, water quality requirements, and permit program requirements for discharges to waters of the United States. U.S. EPA has overall responsibility for the NPDES program, but administration of the program in California has been delegated to the SWRCB and the nine RWQCBs.

The 1987 amendment to the CWA established a framework for regulating discharges under the NPDES program. In 1990, U.S. EPA promulgated regulations for permitting stormwater discharges from industrial sites, including construction sites that disturb 5 acres or more, and from municipal separate storm sewer systems (MS4s) serving a population of 100,000 people or more. The November 16, 1990 regulations, known as the Phase I regulations (Title 55 [FR] 47990), rely on NPDES permit coverage to address stormwater runoff from operators

of medium and large MS4s, construction activity disturbing 5 acres of land or greater, and 10 categories of industrial activity.

On December 8, 1999, U.S. EPA promulgated regulations known as Phase II. The regulations set forth in the Storm Water Phase II Final Rule (Volume 64 *Federal Register* 68722) require permit coverage for discharges from small municipalities, including nontraditional small MS4s, which are governmental facilities (such as military bases, public campuses, and prison and hospital complexes) and from construction sites disturbing at least 1 acre of land. Phase II is intended to further reduce adverse impacts on water quality in receiving waters and aquatic habitats by instituting controls on the unregulated sources of stormwater discharges that have the greatest likelihood of continued environmental degradation. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the “maximum extent practicable” through the use of best management practices (BMPs). The focus of the Phase II program is the implementation of the following six minimum control measures: public education and outreach, public participation and involvement, illicit discharge detection and elimination, construction site runoff control, post-construction runoff control, and pollution prevention and good housekeeping.

Under Phase II regulations in California, small MS4s are covered under SWRCB Water Quality Order No. 2003-0005–Division of Water Quality (DWQ), NPDES General Permit No. CAS000004 (Small MS4 Permit).

Construction projects disturbing at least one acre of land are covered under the General Construction Permit: SWRCB Water Quality Order No. 99-08-DWQ, NPDES General Permit No. CAS000002. Compliance with the NPDES General Construction Permit requires that any construction activity affecting one acre or more obtain the General Construction Activity Storm Water Permit. Permit applicants are required to submit a notice of intent to the SWRCB and to prepare a storm water pollution prevention plan (SWPPP). The SWPPP identifies BMPs that must be implemented to reduce construction effects on receiving water quality. The BMPs identified are directed at implementing both sediment and erosion control measures and other measures to control potential chemical contaminants. Examples of construction BMPs identified in SWPPPs include using temporary mulching, seeding, or other stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains; and using barriers, such as straw wattles or silt fencing, to minimize the amount of uncontrolled runoff that could enter drains or surface water.

Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce nonstormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of postconstruction permanent BMPs that will remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements.

Napa County is a co-permittee on an MS4 municipal stormwater NPDES permit along with the cities of Napa, St. Helena, and Calistoga, and the town of Yountville. A stormwater management plan (SWMP) in support of the County’s stormwater management program was completed in 2003, which outlines the County’s approach to compliance with the requirements of the NPDES permit and addresses the program areas required under the MS4 permit. It also includes a voluntary water quality monitoring program. The program is funded through a Joint Powers Authority administered by the Napa County Flood Control and Water Conservation District. Stormwater is also managed under Napa County Ordinance 1240, Stormwater Management and Discharge Control, administered by the Napa County PBESs.

CALIFORNIA WATER CODE (DIVISION 3, DAMS AND RESERVOIRS)

Since 1929, the State of California has supervised dams to prevent failure in order to safeguard life and protect property. The legislation resulted from the failure of St. Francis Dam in March 1928. Legislation enacted in 1965, as a result of the failure of Baldwin Reservoir in 1963, revised the statutes to include off stream storage. This legislation is regulated by the DWR Division of Safety of Dams (DSOD). Two classifications of dam types are covered: (1) dam structures that are or will be in the future 25 feet or more in height from the natural bed of the stream or water course at the downstream toe of the barrier and (2) dams that have an impounding capacity of 50 af or more. Implementing the legislation involves use of geology and geotechnical engineering over the entirety of the dam's useful life for site selection, dam design and construction, and on-going inspection of the impounding structures.

LOCAL

NAPA COUNTY GENERAL PLAN

The *Napa County General Plan* (2008) serves as a broad framework for planning the future of Napa County. The Conservation Element contains the following policies that are applicable to the proposed project:

- ▲ **Policy CON-44:** The County shall identify, improve, and conserve Napa County's surface water resources through the following measures:
 - a) Evaluate and develop land use policies resulting in the appropriate density and mix of impervious surface and stable vegetation cover to improve water quality and reduce surface water pollution and siltation within domestic water supply watersheds.
 - b) Encourage public agencies and private individuals to explore environmentally sensitive ways to store winter runoff in consultation with the State Department of Water Resources and other regulatory agencies.
- ▲ **Policy CON-47:** The County shall comply with applicable Water Quality Control/Basin Plans as amended through the Total Maximum Daily Load (TMDL) process to improve water quality. In its efforts to comply, the following may be undertaken:
 - c) Retrofitting County-maintained roads to reduce sediment caused by runoff.
 - e) Ensuring continued effectiveness of the National Pollution Discharge Elimination System (NPDES) program and storm water pollution prevention.
 - f) Ensuring continued effectiveness of the County's Conservation Regulations related to vineyard projects and other earth-disturbing activities.
 - g) Addressing effects related to past and current mining, grazing, and other activities to the extent feasible.
- ▲ **Policy CON-48:** Proposed developments shall implement project-specific sediment and erosion control measures (e.g., erosion control plans and/or stormwater pollution prevention plans) that maintain pre-development sediment erosion conditions or at minimum comply with state water quality pollution control (i.e., Basin Plan) requirements and are protective of the County's sensitive domestic supply watersheds. Technical reports and/or erosion control plans that recommend site-specific erosion control measures shall meet the requirements of the County Code and provide detailed information regarding site specific geologic, soil, and hydrologic conditions and how the proposed measure will function.

- ▲ **Policy CON-50:** The County will take appropriate steps to protect surface water quality and quantity, including the following:
 - c) The County shall require discretionary projects to meet performance standards designed to ensure peak runoff in two-, ten-, 50-, and 100-year events following development is not greater than predevelopment conditions.
 - e) In conformance with National Pollution Discharge Elimination System (NPDES) requirements, prohibit grading and excavation unless it can be demonstrated that such activities will not result in significant soil erosion, silting of lower slopes or waterways, slide damage, flooding problems, or damage to wildlife and fishery habitats.
 - f) Adopt development standards, in conformance with NPDES Phase II requirements, for post-construction storm water control.
 - g) Address potential soil erosion by maintaining sections of the County Code that require all construction-related activities to have protective measures in place or installed by the grading deadlines established in the Conservation Regulations. In addition, the County shall ensure enforceable fines are levied upon code violators and shall require violators to perform all necessary remediation activities.
- ▲ **Policy CON-53:** The County shall ensure that the intensity and timing of new development are consistent with the capacity of water supplies and protect groundwater and other water supplies by requiring all applicants for discretionary projects to demonstrate the availability of an adequate water supply prior to approval. Depending on the site location and the specific circumstances, adequate demonstration of availability may include evidence or calculation of groundwater availability via an appropriate hydrogeologic analysis or may be satisfied by compliance with County Code “fair-share” provisions or applicable State law. In some areas, evidence may be provided through coordination with applicable municipalities and public and private water purveyors to verify water supply sufficiency.
- ▲ **Policy CON-60:** The County shall promote cost-effective water conservation and water efficiency measures that reduce water loss, waste, and water demand through the following measures:
 - a) Taking a leadership role in water conservation efforts, by monitoring and publicly reporting on the County’s water use, using low flow fixtures, drought-tolerant landscaping, drip irrigation, recycled water use where available and appropriate, periodic water use “audits” and other strategies to conserve water at all County-owned and operated facilities.
 - b) Requiring the use of water conservation measures in areas served by municipal supplies to improve water use efficiency and reduce overall demand including, but not limited to, working cooperatively with all water providers and with developers to incorporate water conservation measures into project designs (e.g., as recommended by the California Urban Water Conservation Council), and coordination with water providers to continue to develop and implement water drought contingency plans to assist County citizens and businesses in reducing water use during periods of water shortages and emergencies.
- ▲ **Policy CON-60.5:** All aspects of landscaping from the selection of plants to soil preparation and the installation of irrigation systems should be designed to reduce water demand, retain runoff, decrease flooding, and recharge groundwater.

The Safety Element contains the following goals and policies that are applicable to the proposed project:

- ▲ **Policy SAF-3:** The County shall evaluate potential safety hazards when considering General Plan Amendments, rezonings, or other project approvals (including but not limited to new residential developments, roads or highways, and all structures proposed to be open to the public and serving 50 persons or more) in areas characterized by:
 - 1) Slopes over 15%,
 - 2) Identified landslides,
 - 3) Floodplains,
 - 4) Medium or high fire hazard severity,
 - 5) Former marshlands, or
 - 6) Fault zones.

Goal SAF-4: To protect residents and businesses from hazards caused by flooding.

- ▲ **Policy SAF-26:** Development proposals shall be reviewed with reference to the dam failure inundation maps in order to determine evacuation routes.

NAPA COUNTY CODE

Napa County Code (Chapter 18.108, Conservation Regulations) addresses erosion control and protection of the County's streams and waterways. The intent of these regulations is to protect lands from excessive soil loss and maintain or improve water quality of watercourses by minimizing soil erosion from earthmoving, land disturbing, and grading activities. The following are key provisions of the conservation regulations.

Section 18.108.025 – General Provisions, Intermittent/Perennial Streams

This section of the County code establishes stream setbacks for earthmoving activities and grading for all new developments, including agricultural and residential developments, and for replanting of existing vineyards when replanting occurs outside of the existing vineyard footprint and when the project would require a grading permit pursuant to the California Building Code.

Setbacks included in the Code range from 35 to 150 feet and are dependent on the slope of the terrain parallel to the top of bank of the stream, with wider setbacks required on steeper slopes. Where the outboard dripline of upper canopy vegetation is located outside the setback required by the slope steepness, the setback will extend to the outboard dripline. Re-vegetation of portions of the streamside setbacks may be required as a part of an erosion control plan, grading permit, or NPDES related permit.

Section 18.108.075 – Requirements for Structural Erosion Control Measures

This section establishes erosion control requirements for structural developments (anything built or constructed on, above, or below the surface of the land), and requires the submission of Evidence of Erosion Control Measures, and the incorporation of such measures in all applicable building, grading, septic, or other required plans or plot plans submitted for County approval.

Section 18.108.135 – Oversight and Operation Requirements

Maintenance and monitoring is a requirement of any erosion control plan and is the ultimate responsibility of the property owner. Section 18.108.135 requires that maintenance and monitoring be implemented for any erosion control plan. Specific actions are required under Napa County Code Section 18.108.135 in the event of existing or pending erosion control measure failures.

Finally, to assure the erosion control measures are adequately in place, the County may perform annual inspections of the project site, after the first major storm event of each winter and until the project has been completed and stable for three years. During these inspections, County staff may require that remedial actions

be implemented where non-functioning or ineffective measures are identified. Additionally, once the project has been deemed complete, random site inspections by County staff may also occur with the same consequences.

Chapter 16.28 – Stormwater Management and Discharge Control

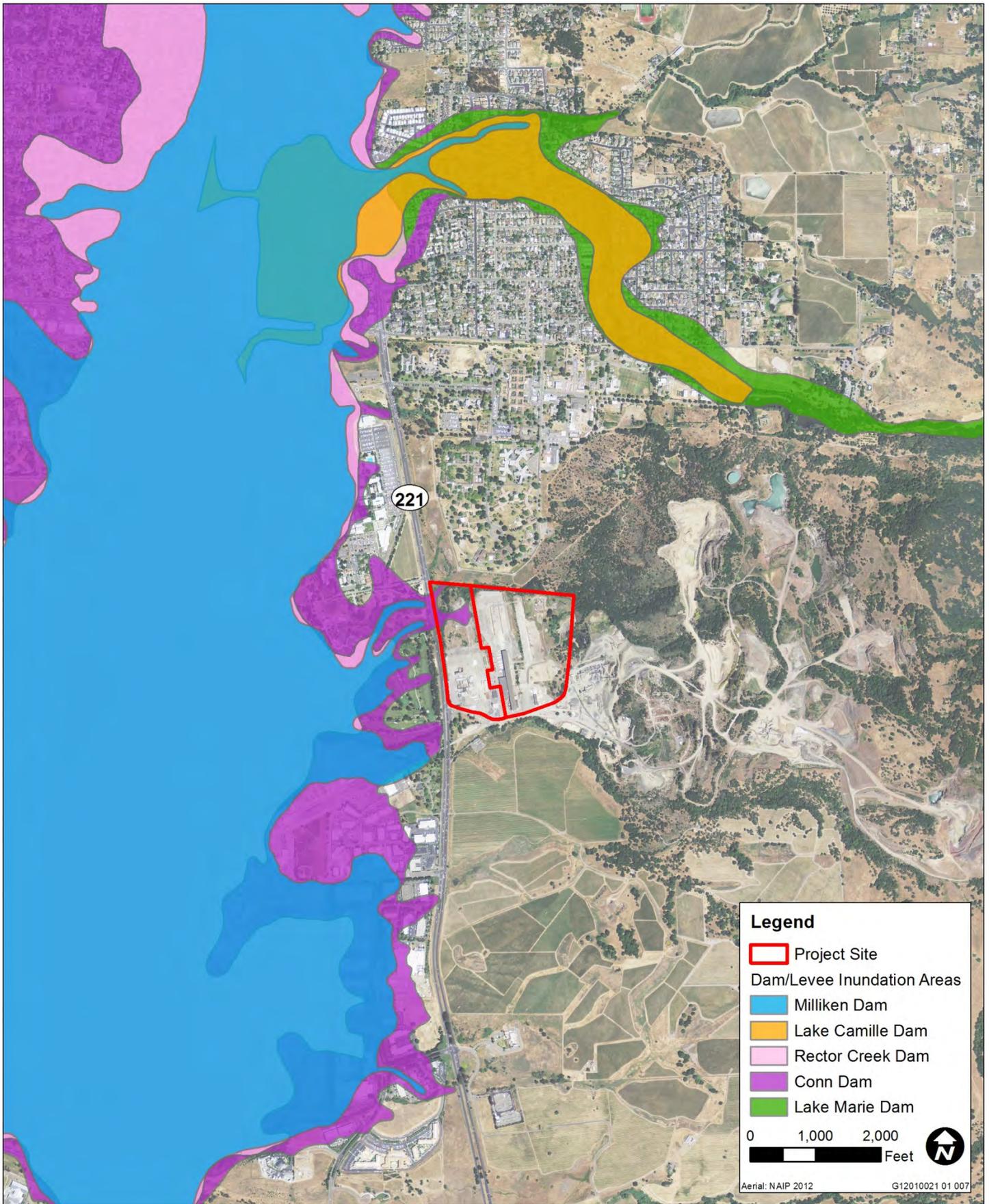
As part of the County's compliance with the requirements of the NPDES stormwater permitting program, the County adopted Ordinance No. 1240 (Stormwater Management and Discharge Control) on June 22, 2004. The purpose of this ordinance is to protect water resources and improve water quality through the use of BMPs and meet the requirements of the Clean Water Act, Porter-Cologne Water Quality Act, and the Basin Plan. Specifically, Section 16.28.100 requires the identification and use of BMPs to control the volume, rate and potential pollutant discharge (including soil erosion) from construction, new development and redevelopment projects, existing businesses and other activity that may cause or contribute to stormwater pollution. The County currently accepts the California Stormwater Quality Association California Stormwater Best Management Practice Handbooks as effective standards for implementation and installation of stormwater pollution prevention measures, which provides detailed information on BMPs associated with use and design for maximum treatment effectiveness.

NAPA COUNTY FLOOD PLAIN MANAGEMENT ORDINANCE

The purpose of the County's Flood Plain Management Ordinance is to reduce the potential for flood related damage within the County which may result in loss of life and property, pose possible health and safety hazards, disrupt commerce and governmental services, produce extraordinary public expenditure for flood protection and relief, and impair the tax base, all of which adversely affect the public health, safety, and general welfare. The ordinance seeks to perform the following:

- ▲ protect human life and health;
- ▲ minimize expenditure of public money for costly flood-control projects;
- ▲ minimize the need for rescue and relief efforts associated with flooding;
- ▲ minimize prolonged business interruptions;
- ▲ minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, and streets and bridges located in floodplain areas;
- ▲ help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard to minimize future blighted areas caused by flood damage;
- ▲ assist prospective purchasers in receiving notification that property is in a flood insurance zone;
- ▲ to establish that those who occupy the special flood hazard areas assume responsibility for their actions; and
- ▲ to improve the normal functioning of floodplains and flood zones and effectively garner and preserve the numerous environmental benefits they afford.

The County's Flood Plain Management Ordinance identifies flood hazard zones and incorporates by reference official FIRM maps approved by FEMA. The County further maintains floodway and floodplain mapping, identifying possible inundation areas related to the 100-year (floodway) and 500-year (floodplain) flood events, as well as a Dam Failure Inundation Map, documenting areas that may be subject to severe flooding in the event of catastrophic failure of one of sixteen major dams in the County. As shown in Exhibit 3.6-2, lands along the Napa River in the project area are within the dam inundation area for the Milliken, Rector Creek, and Conn Dams; lands along the Tulucay Creek in the project area are within the dam inundation area for the Lake Camille and Lake Marie Dams. A small portion of the project site (the northwest corner of the Pacific Coast parcel) is within the dam inundation area for the Conn Dam. The Conn Dam, which forms Lake Hennessey, has a capacity of 31,000 acre-feet, and is owned by the City of Napa.



Source: Data downloaded from Napa County in 2013; Adapted by Ascent Environmental in 2013

Exhibit 3.6-2

Dam Inundation Areas in the Project Area



NAPA COUNTY STORMWATER MANAGEMENT AND DISCHARGE CONTROL ORDINANCE

To comply with requirements of the NPDES Phase II General Permit, Napa County adopted the Stormwater Management and Discharge Control Ordinance (Ordinance No. 1240) on June 22, 2004. This ordinance applies to projects in unincorporated Napa County. The Napa County Post-Construction Runoff Management Requirements, adopted on June 3, 2008, provide information on how to comply with the Post-Construction Runoff Management BMP requirements established in the ordinance.

NAPA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

The Napa County Flood Control and Water Conservation District (NCFCWCD) is governed by a board of eleven elected officials: the five Napa County Supervisors; the Mayors of Napa, St. Helena, American Canyon, Yountville, and Calistoga; and one Napa City Council member. The NCFCWCD's mission is the conservation and management of flood and storm waters to protect life and property; the maintenance of the County watershed using the highest level of environmentally sound practices; and the provision of coordinated planning for water supply needs of the community. Additionally, while the NCFCWCD is primarily charged with flood protection in the County, it also provides management and monitoring of groundwater, and assistance to the community in complying with NPDES requirements, and watershed maintenance activities among other services.

The Napa Countywide Stormwater Pollution Prevention Program (NCSPPP), administered by the NCFCWCD, is a joint effort of the Napa County; cities of American Canyon, Napa, St. Helena, and Calistoga; and the Town of Yountville to:

- ▲ prevent stormwater pollution,
- ▲ protect and enhance water quality in creeks and wetlands,
- ▲ preserve beneficial uses of local waterways, and
- ▲ comply with federal and state regulations.

Though the entities of the NCSPPP carry out their own individual stormwater pollution prevention programs, the NCSPPP provides for the coordination and consistency of approaches between the individual participants and documents their efforts in annual reports.

NAPA OPERATIONAL AREA HAZARDS MITIGATION PLAN

The OAHMP includes mitigation for addressing the most significant hazards in the County: floods, earthquakes, wildland interface fires, and terrorism and technological hazards. The OAHMP's Mitigation Strategy includes goals, programs, objectives, and action items to help ensure effective emergency response to significant hazards. Objectives and action items in the OAHMP include community education programs, post-emergency power generation plans, remote area detection systems, and communication and response systems that contribute to effective emergency response in the County (Napa County 2004).

The OAHMP is required to be updated every 5 years; the last update was initiated in 2009 and the updated OAHMP was submitted to State and Federal review parties in 2010. As part of the adoption process, the California Emergency Management Agency and the Federal Emergency Management Agency (FEMA) must review and approve the content and the planning process used to develop the OAHMP. The State approved the OAHMP; however, FEMA "rejected" it through a number of draft submittal processes. Over the last year, the County has been working with FEMA to improve plan content and documentation. The next step is a stakeholder involvement process to vet and develop additional content.

3.6.2 ENVIRONMENTAL SETTING

REGIONAL SETTING

Napa County is located within the Coast Range physiographic province northeast of San Francisco. The County is bordered to the east by California's Central Valley and to the west by the Coast Ranges. The topography of Napa County consists of a series of parallel northwest-trending mountain ridges and intervening valleys of varying sizes. These parallel northwest-trending mountain ridges subdivide the County into three principal watersheds: Napa River watershed, Putah Creek/Lake Berryessa watershed, and Suisun Creek watershed.

The project site is located in the Napa River watershed, which extends in a northwesterly direction roughly 45 miles from San Pablo Bay to the hills north of Calistoga, and includes primarily a central valley floor and eastern and western mountains to either side of the valley floor. The watershed is bounded by Mount St. Helena to the north; the Mayacamas Mountains to the west; Howell Mountain, Atlas Peak, and Mt. George to the east; and the Napa-Sonoma Marsh to the south. The Napa River, the largest river in the Napa County, drains the watershed and empties into San Pablo Bay to the south. The lowest reaches of the Napa River and tributaries in the lower Napa Valley are tidally influenced due to the proximity to San Pablo Bay. Along the Napa River, the tidal influence is observed northward into the City of Napa.

The Napa River watershed has the following major storage facilities: Kimball Reservoir, Bell Canyon Reservoir, Lake Hennessey, Rector Reservoir, and Milliken Reservoir. Twenty-eight dams are located in the Napa River watershed. As described above and shown in Exhibit 3.6-2, lands along the Napa River in the project area are within the dam inundation area for the Milliken, Rector Creek, and Conn Dams; lands along the Tulucay Creek in the project area are within the dam inundation area for the Lake Camille and Lake Marie Dams. A small portion of the project site (the northwest corner of the Pacific Coast parcel) is within the dam inundation area for the Conn Dam. Owned by the City of Napa, the Conn Dam, forms Lake Hennessey, which has a storage capacity of 31,000 acre-feet.

Napa County has a Mediterranean climate, with distinct wet and dry seasons. Approximately 90% of the precipitation occurs between November and April, and precipitation varies significantly throughout the County, both in a north-south direction and with elevation. Storms approach the County both from the west, rising over the Mayacamas Mountains and moving into the Napa Valley and beyond, and from San Pablo and San Francisco Bay to the south, and moving northward up the valleys. Rainfall distribution is strongly correlated with elevation.

Annual precipitation varies not only spatially across the County, but it also varies significantly from year to year, and deviations can be as high as 200% from the 85-year average. In general, precipitation increases from south to north and with increasing elevation, and average annual precipitation varies by more than a factor of three throughout the County, from 22.5 to 75 inches/year. Average annual precipitation in the City of Napa is on the order of 26.5 inches/year.

AREA HYDROLOGY

As noted above, the project site is located in the lower Napa River watershed. The Napa River traverses north to south through the City of Napa, approximately 0.75 mile west of the project site. During the period of record 1999 to 2004, the peak flow event for the Napa River near the City of Napa was 11,733 cubic feet per second (cfs) (Napa County 2007:4-11-6). Streamflows generally peak in January or February and are lowest from August through November. Arroyo Creek flows into the Napa River approximately 0.3 mile southwest of the project site.

DRAINAGE

The project site is located at an elevation of approximately 80 to 100 feet above mean sea level (msl) (Napa County 2012). The site is relatively level, except for the easternmost area, which slopes up to the Syar Napa Quarry. The majority of the site has been previously graded, graveled, and paved. Based on a site visit to the Pacific Coast parcel, there do not appear to be any permanent natural surface water features on that portion of the project site; however, an intermittent stream is located in the northwest corner of the Pacific Coast parcel. Based on review of aerial photographs, a drainage ditch may be present on the Boca parcel, but this feature could not be observed up close, and would need to be confirmed through a site survey. Some areas of open space and nonnative annual grassland on the project site allow for infiltration of stormwater runoff. In general, stormwater runoff in the City of Napa is conveyed to the Napa River or one of its tributaries (City of Napa 2010:4-13). The closest stormwater outfall is located at the northwest corner of the Pacific Coast parcel, where there is an existing detention basin that outfalls on the west side of SR 221.

EXISTING FLOODING CONDITIONS

The 100-year flood refers to the flood resulting from a storm event which has a probability of occurring once every 100 years, or a 1% chance of occurring in any given year. Areas mapped in the 100-year floodplain area are subject to inundation during a 100-year storm event. The project site lies outside of the designated 100-year floodplain. In addition, according to the FEMA FIRM, the project site is not located within the 100-year or 500-year floodplain (see Exhibit 3.6-1). Nearby areas within the 100-year floodplain are located along the Napa River, approximately 0.75 mile west of the project site.

SURFACE WATER QUALITY

As noted above, the Napa River and its tributaries have been listed under Section 303(d) as water quality impaired for nutrients, pathogens, and sedimentation/siltation.

SEDIMENT LOADING

The construction of several large dams between 1924 and 1959 on major tributaries in the eastern Napa River watershed and northern headwater areas of Napa River has affected sediment transport processes into the mainstem Napa River by reducing the delivery of the coarse load sediments to the river (Napa County 2007:4.11-14). Thirty percent of the Napa River watershed drains into dams, such that ponds and reservoirs behind these dams capture a significant fraction of all sediment input to channels.

Historically, the Napa River system has typically been described as a gravel-bed river; more recently, the Napa River has become increasingly-dominated by finer sediments (Napa County 2007:4.11-17). The sources for these finer sediments include a variety of land use, infrastructure, and in-stream erosion sediment sources. Dams that trap sediment in the area have not significantly reduced the degree to which finer sediments are being delivered to the watershed. As a result of this fine sedimentation, habitats for steelhead, Chinook salmon, and California freshwater shrimp, which rely on more gravel substrate in the river, have been negatively affected from reduced gravel permeability. The SFRWQCB has released a technical report that proposes a TMDL for the Napa River that calls for substantial reductions in the amount of fine sediment deposits into the watershed to improve water quality and maintain beneficial uses of the river, including spawning and rearing habitat for salmonid species.

TEMPERATURE

The Napa River watershed currently provides habitat for cold-water anadromous fish species, including steelhead trout and Chinook salmon. Water temperature is a key constituent for assessing the quality of water within the Napa River watershed. Steelhead and Chinook salmon are highly sensitive to temperature and require

cold water throughout the majority of their life stages. Mainstem and tributary temperatures are elevated to a level that can cause stress to salmonids, but not high enough to be acutely lethal. Elevated temperature conditions contribute to reduced habitat conditions for salmonids, particularly when combined with low summer base flows and aggraded channels (raised from sediment).

NUTRIENTS

Nutrients, specifically nitrogen and phosphorus, are essential for life and play a primary role in ecosystem functions. In addition to naturally present concentrations in the atmosphere and organic matter, nutrients are introduced to waterbodies through human or animal waste disposal or agricultural application of fertilizers. Nutrients are commonly the limiting factor for growth in aquatic systems. Excessive levels of nutrients affect aquatic systems in a wide range of ways, including producing toxic or eutrophic¹ conditions, both of which impair aquatic life.

A study of potential sources of nutrients within the watershed identified numerous nutrient load contributors, including point sources such as wastewater treatment plants, and non-point sources such as septic system seepage, agricultural and urban runoff, and atmospheric deposition (Napa County 2007:4.11-17). No specific numeric nutrient targets for the Napa River watershed have been established by SFRWQCB.

PATHOGENS

High concentrations of fecal bacteria have been recorded in the Napa River since the 1960s (Napa County 2007:4.11-17). Sources that contribute to the significant pathogen loads in the watershed include faulty on-site sewage treatment systems (i.e., septic systems), failing sanitary sewer lines, municipal runoff, and livestock grazing. Past monitoring efforts indicate that urban runoff and failing septic systems are the primary pathogen sources during wet weather months, while failing sanitary sewer lines and septic tanks may constitute the primary pathogen sources during the dry season. To address this issue, a TMDL has been developed for the Napa River and its tributaries, which implements density-based targets and zero discharge of untreated or inadequately treated human waste.

GROUNDWATER

The California Department of Water Resources (DWR) has identified the major basins and subbasins in and around Napa County, including the Napa-Sonoma Valley, Berryessa Valley, Pope Valley, and a small part of the Suisun-Fairfield Valley Groundwater Basins (Napa County 2013:6). These groundwater basins defined by DWR are not confined within county boundaries, and DWR-designated “basin” or “subbasin” designations do not cover all of Napa County. The project site is located in the Napa-Sonoma Valley Basin, Napa Valley Subbasin (see Exhibit 3.6-1).

Groundwater conditions outside of the DWR-designated areas are also very important in Napa County. An example of such an area is the Milliken-Sarco-Tuluca (MST) Basin, a locally identified groundwater deficient area. For purposes of local planning, understanding, and studies, the County has been subdivided into a series of groundwater subareas, including the Knoxville, Livermore Ranch, Pope Valley, Berryessa, Angwin, Central Interior Valleys, Eastern Mountains, Southern Interior Valleys, Jameson/American Canyon, Napa River Marshes, Carneros, Western Mountains Subareas, and five Napa Valley Floor Subareas (Calistoga, St. Helena, Yountville, Napa, and MST).

¹ Having waters rich in mineral and organic nutrients that promote a proliferation of plant life, especially algae, which reduces the dissolved oxygen content and often causes the extinction of other organisms.

The MST Basin is the second largest groundwater basin in the County. It is located adjacent to the City of Napa along the eastern edge of the valley floor and covers an area of approximately 15 square miles. As a result of declining groundwater levels, the MST Basin is designated as groundwater deficient by the County and is subject to special controls under its Groundwater Ordinance. The project site is located outside of but adjacent to the MST Basin.

The Napa Valley Subbasin covers an area of 45,900 acres (DWR 2003). Municipal and irrigation wells have average depths ranging from about 200 to 500 feet. Average well yields are 223 gallons per minute (gpm) and maximum well yields are 3,000 gpm. In general, groundwater quality throughout most of the region is suitable for most urban and agricultural uses with only local impairments. The primary constituents of concern are high total dissolved solids, nitrate, boron, and organic compounds.

A *Draft Limited Phase I Environmental Site Assessment* (Phase I ESA) was prepared for the Boca parcel in February 2012 (Napa County 2012). According to the Phase I ESA, based on the surface topography, groundwater in the area of the project site is anticipated to flow to the west towards the Napa River.

The Phase I ESA also included a review of adjacent parcels with possible environmental concerns (Napa County 2012). The Phase I ESA indicates that groundwater monitoring wells were installed on the Syar Industries, Inc. parcel following the excavation and tank removal activities that were sampled from 2004 to 2005 on a quarterly basis. Detectable concentrations of petroleum hydrocarbons were found in groundwater during the post excavation monitoring of the site. Based on decreasing concentration trends of contaminants in groundwater it was concluded that the remaining contaminants in groundwater would naturally attenuate and case closure was requested. The Napa County PBES and the SFRWQCB issued no further action letters for the site in March 2007, but stated that since residual soil and groundwater contamination remain beneath the site, future development or re-use of the site must be reviewed by PBES. Please see Section 3.5, "Hazards and Hazardous Materials," for more information.

3.6.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

METHODS AND ASSUMPTIONS

Evaluation of potential hydrologic and water quality impacts was based on a review of existing information from previously completed documents that address water resources in the project vicinity, including the *Napa County General Plan* (2008), *Napa County General Plan Update Draft Environmental Impact Report* (2007), and *Draft Limited Phase I Environmental Site Assessment* (2012). The information obtained from these sources was reviewed and summarized to establish existing conditions and to identify potential environmental effects, based on the standards of significance presented in this chapter. In determining the level of significance, the analysis assumes that the proposed project would comply with relevant federal, state, and local ordinances and regulations (see Section 3.6.1, "Regulatory Setting").

Water quality impacts associated with temporary construction activities were assessed in a qualitative manner. The potential short-term, construction-related effects of grading and land disturbance were assessed based on the probability of seasonal exposure to rainfall and runoff, routes of exposure for contaminants to enter surface water, and the magnitude and duration of construction relative to the potential water quality parameters expected to be affected by the activity.

As a County facility, project implementation would comply with the applicable County Code sections (i.e., Chapter 18.108, Conservation Regulations), stormwater management programs and regulations. In particular, project construction activities would be conducted in compliance with the County's SWMP, and the SWRCB NPDES Stormwater General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities ("General Construction NPDES Permit," Order No. 2009-0009-DWQ/NPDES Permit No.

CAS000002). The General Construction NPDES Permit requires the preparation and implementation of a SWPPP that outlines the temporary construction-related BMPs to prevent and minimize erosion, sedimentation, and discharge of other construction-related contaminants, as well as permanent post-construction BMPs to minimize adverse long-term stormwater related–runoff water quality effects.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, a hydrology and water quality impact is considered significant if implementation of the proposed project would do any of the following:

- ▲ violate any water quality standards or waste discharge requirements;
- ▲ substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (including the MST Basin);
- ▲ substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial on- or off-site erosion or siltation;
- ▲ substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding;
- ▲ create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- ▲ otherwise substantially degrade water quality;
- ▲ place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or FIRM or other flood hazard delineation map;
- ▲ place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- ▲ expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- ▲ result in inundation by seiche, tsunami, or mudflow.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

The proposed project would not use groundwater (including the existing well[s]) for its water supply needs. Depending on the final site configuration selected, the existing groundwater well(s) and distribution lines on the project site would be avoided or decommissioned in accordance with applicable state and county requirements. The County has proposed that potable water would be supplied to the project site by the City of Napa (see Section 3.10, “Utilities and Service Systems,” for a discussion of the proposed project’s impact on water supply). The City currently relies on local water supplies from Lake Hennessey, Milliken Reservoir, and State Water Project water delivered through the North Bay Aqueduct for its municipal water supply; the City does not utilize groundwater. Although project construction would result in new impervious surfaces (see Impact 3.6-3), the total area of impervious surface will decrease with project implementation compared to current conditions because of the developed nature of the site (see Table 3-6.1). Further, the project is not anticipated to significantly affect groundwater supply because sufficient stormwater infrastructure would be constructed as part of project site development to detain and infiltrate stormwater runoff and prevent long-term water quality degradation (see Mitigation Measures 3.6-2a and 3.6-2b). Therefore, project construction and operation would have no impact on groundwater supply or quality, and this issue is not discussed further in this DEIR.

The project site is not located in a flood hazard area (Napa County 2008:SAF-11). In addition, according to the FEMA FIRM for the project area, the project site is not located within the 100-year or 500-year floodplain (see Exhibit 3.6-1). Therefore, project implementation would not place housing in a 100-year flood hazard area or

place structures in a 100-year flood hazard area that would redirect flood flows. Thus, these issues are not discussed further in this DEIR.

As shown in Exhibit 3.6-2, a small portion of the project site (the northwest corner of the Pacific Coast parcel) is within the dam inundation area for the Conn Dam. Conn Dam is under the jurisdiction of the DSOD, which imposes strict standards for the design, maintenance, and monitoring of dams under its jurisdiction. In addition to the DSOD requirements, risks associated with dams in the vicinity of the City's Planning Area (including Conn Dam) are addressed by Policy HS-4.1 in the *City of Napa General Plan*, which requires the City to maintain a program of reservoir dam safety review and continue to cooperate with DSOD in addressing any needed dam maintenance or structural improvements. The County's OAHMP (2004) includes mitigation for addressing the most significant hazards in the County, including floods (see objectives and action items provided above, as well as Mitigation Measure 3.5-2 in Section 3.5, "Hazards and Hazardous Materials," which requires the County to prepare an emergency response plan consistent with the County's OAHMP). Finally, multiple regulations such as the National Flood Insurance Act, National Flood Insurance Reform Act, Cobey-Alquist Floodplain Management Act, and local regulations would be expected to adequately protect residents from the effect of dam failure. Therefore, this issue is not addressed further in this DEIR.

Because of the distance from the nearest open waterbody, the Pacific Ocean (approximately 40 miles to the west), and the elevation of the site (approximately 80–100 feet above msl), the proposed project would not be affected by inundation as a result of seiche or tsunami. In addition, there are no steep areas that have the potential to generate mudflows that would affect the project site. Therefore, these issues are not addressed further in this DEIR.

IMPACT ANALYSIS

Impact 3.6-1	Short-term, Construction-Related Water Quality Degradation. Project construction activities would involve extensive grading and movement of soil, which could result in erosion and sedimentation, and discharge of other nonpoint source pollutants in on-site stormwater that could then drain to off-site areas and degrade local water quality. To avoid or minimize the potential for adverse construction-related effects on water quality, the County would be required to comply with its stream setbacks and SFRWQCB regulations that require the preparation of a SWPPP and implementation of BMPs that protect water quality and minimize erosion. Therefore, this impact would be <i>less than significant</i> .
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Detailed construction plans and specifications for the proposed project have not yet been developed. However, project construction would involve extensive ground-disturbing activities over approximately 15 to 20 acres, including grading, trenching, and facility construction activities. Construction is proposed to begin in March 2016 and would be completed in approximately 24 months. The new jail is planned to be fully operational by March 2018. Depending on scheduling, construction could potentially occur during two rainy seasons (October 1 through April 30). Because of the increase in exposed surfaces and the earth-moving activities, the potential for erosion and sedimentation runoff is higher during the rainy season.

Construction activities would create the potential for soil erosion and sedimentation of stormwater drainage systems, both within and downstream of the project site. The construction process may also result in accidental release of other pollutants to surface waters, including oil and gas, chemical substances used during construction, waste concrete, and wash water. Many construction-related wastes have the potential to degrade existing water quality by altering the dissolved-oxygen content, temperature, pH, suspended-sediment and turbidity levels, or nutrient content, or by causing toxic effects in the aquatic environment. Proposed construction activities if not properly implemented could violate water quality standards or cause direct harm to aquatic organisms.

The probability that project implementation would cause localized erosion hazards is relatively low because the project site is generally flat and the soil types on the site are known to have only moderate erosive potential (see discussion under “Geology and Soils” in the Initial Study included as Appendix A). However, intense rainfall and associated stormwater runoff could result in short periods of sheet erosion within areas of exposed or stockpiled soils. If uncontrolled, these soil materials could cause sedimentation and blockage of drainage channels. Further, the compaction of soils by heavy equipment may reduce the infiltration capacity of soils and increase the potential for runoff and erosion. Stormwater runoff could also wash construction materials into receiving waterbodies and negatively impact water quality. Non-stormwater discharges could result from activities such as discharge or accidental spills of hazardous substances such as fuels, oils, concrete, paints, solvents, cleaners, or other construction materials.

The County is required to comply with its stream setbacks and state regulations pertaining to the control of on-site stormwater, including requirements of the SFRWQCB. These regulations require the preparation of a SWPPP and implementation of BMPs to control on-site erosion and protect water quality. Therefore, this impact would be **less than significant**.

Mitigation Measure

No mitigation is required.

Impact 3.6-2	Increase in Surface Runoff Potentially Exceeding the Capacity of Existing or Planned Stormwater Drainage Systems. Construction and operation of a new jail and ancillary facilities would add new development at the project site, which could potentially increase surface runoff. This increase in surface runoff could result in an increase in both the total volume and the peak discharge rate of stormwater runoff, and could result in exceeding the capacity of on-site stormwater systems and greater potential for on- and off-site flooding. Therefore, this impact would be potentially significant . This impact could be reduced to a less-than-significant level through implementation of Mitigation Measures 3.6-2a and 3.6-2b.
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Topography across the project site is relatively level, except for the easternmost area, which slopes up to the adjacent rock quarry. Based on a site visit to the Pacific Coast parcel, there do not appear to be any permanent natural surface water features on that portion of the project site; however, an intermittent stream is located in the northwest corner of the Pacific Coast parcel. Based on review of aerial photographs, a drainage ditch may be present on the Boca parcel (this would need to be confirmed through a site survey). While some areas of open space and nonnative annual grassland on the project site allow for infiltration of stormwater runoff, the majority of the site, including areas where development is proposed under both site layout options, has been previously graded, graveled, and paved.

The County proposes to construct new stormwater drainage facilities that would be adequately sized to accommodate the project’s peak stormwater flows. These facilities would include a series of drains, pipes, and culverts that would convey collected stormwater to the existing outfall structure located at the northwest corner of the Pacific Coast parcel, where there is an existing detention basin that outfalls on the west side of SR 221.

Other low-impact development (LID) methods to maintain pre-project runoff levels, including design considerations when planning roads, parking lots, buildings, or landscaping will be incorporated to the maximum extent practicable. In accordance with RWQCB requirements, the project must also consider and incorporate LID techniques to minimize runoff from the project site. The project’s drainage system would be designed to appropriately accommodate the stormwater runoff generated from the new jail and ancillary facilities to maintain pre-project conditions. Because the drainage would be controlled such that post project runoff is equal or less than pre-project discharge rates, the proposed project would not substantially increase the rate or

amount of surface runoff in a manner that would result in on- or off-site flooding and the project would result in less than significant storm drainage impacts.

However, because final drainage design specifications have not been completed, including stormwater flow paths based on a finalized site plan, the project has the potential to cause an increase in surface runoff that would exceed the capacity of the stormwater drainage system, resulting in on- and off-site flooding. This impact would be **potentially significant**.

Mitigation Measure 3.6-2a. Complete Final Drainage Plan and Provide Adequate On-site Storm Drainage Facilities

Prior to final project design, the County will assess drainage patterns and potential downstream flooding impacts including increased flow rates and volume and flood potential. Final project design will include design features to ensure that all runoff from the project site will not exceed pre-project flow rates.

As part of the final design process, the County will ensure that the proposed drainage plans are consistent with local requirements. The final drainage plan will include, but not be limited to, the following items:

- › *an accurate calculation of pre-project and post-project runoff scenarios, obtained using appropriate engineering methods that accurately evaluate potential changes to runoff, including increased surface runoff;*
- › *installation of a drainage basin, if needed, to accommodate on-site stormwater flows designed to be consistent with the requirements of Napa County and provide enough storage to accommodate the difference between calculated 10-year storm peak run-off of the existing site and the 100-year storm runoff of the developed site;*
- › *implementation of appropriate Best Management Practices (BMPs);*
- › *a description of any treatments necessary to protect earthen channels from erosion, and modifications that may be needed to existing underground pipe and culvert capacities;*
- › *a description of the proposed maintenance program for the on-site drainage system; and*
- › *a description of the project-specific standards for installing drainage systems.*

Mitigation Measure 3.6-2b. Prepare and Implement a SWPPP

The County will prepare a SWPPP to include the incorporation of source control, site design, and treatment control BMPs to address anticipated and potential pollutants including but not limited to the following:

Source Control

- › *All storm drain inlets and catch basins will be stenciled or have a tile placed with prohibitive language and/or graphical icons to discourage illegal dumping.*
- › *Waste collection areas will (1) be paved with an impervious surface, designed not to allow runoff from adjoining areas, and screened or walled to prevent off-site transport of trash; and (2) contain attached lids on all trash containers that exclude rain; or (3) contain a roof or awning to minimize direct precipitation. Waste will be collected by a servicing company on a routine basis. This will minimize direct contact of trash and debris with precipitation.*

- › *Drought-tolerant native or naturalized landscaping will be used to the maximum extent practicable to reduce the need for pesticides, fertilizers, and irrigation.*
- › *Maintenance personnel will be educated on environmentally friendly pesticides and herbicides and will be encouraged to reduce or eliminate the need for pesticides. Personnel will also be required to be familiar with and to apply the principles of integrated pest management.*
- › *Maintenance personnel will be educated on effective and efficient use of fertilizers and encouraged to minimize use of their application.*
- › *Maintenance personnel will inspect the site routinely for trash and debris to reduce the potential discharge of materials into the storm drain system. Maintenance personnel will also monitor storm drain inlets and catch basins for trash and debris.*
- › *Efficient landscape irrigation systems with rain sensors will be used where possible to minimize runoff of excess irrigation water to the stormwater conveyance system. Irrigation systems will be designed to each landscape area's specific water requirements. Flow reducers or shutoff valves triggered by a pressure drop will be used to control water loss in the event of broken sprinkler heads or lines.*
- › *Maintenance personnel will be trained to inspect the facilities for signs of plumbing and sewer problems. A routine monitoring schedule will be put in place to check cleanouts and other facility controls for maintenance needs.*

Site Design

- › *Runoff from roofs will be directed to landscaped areas or infiltration basins to allow for infiltration and reduced runoff to the maximum extent practicable.*
- › *Pavers or other porous surfaces such as grass paver systems, gravel paver systems, porous concrete, porous asphalt, or granular surfaces will be used where possible to reduce impervious areas.*
- › *The project will maintain existing flow patterns and control runoff from impervious areas, particularly from pavement, by directing flow to an engineered stormwater drain system that will control runoff from the development.*

Treatment Control

If determined to be needed, the proposed detention basin(s) on-site will be designed with the following general design parameters:

- › *basins must drain within 24 to 72 hours (48-hour optimal drawdown),*
- › *inlet/outlet dissipation must be included to reduce velocity,*
- › *length to width ratio should be at least 1.5:1 (may use internal baffling or berms),*
- › *optimal basin depths range from 2 to 5 feet, and*
- › *maintenance access ramp and perimeter access will be provided.*

Implementation of Mitigation Measure 3.6-2a would reduce the significant impact associated with increased surface runoff that would exceed the capacity of the stormwater drainage system, resulting in on- and off-site flooding to a **less-than-significant** level by providing adequate on-site storm drainage facilities to accommodate the proposed project's stormwater demands and reducing runoff from the project site to rates not exceeding

pre-project conditions. Further, implementation of Mitigation Measure 3.6-2b would reduce impacts associated with the water quality of the increased surface runoff to a **less-than-significant** level by requiring the County to incorporate appropriate BMPs into the design of the development to prevent long-term water quality degradation.

Impact 3.6-3 Long-Term Water Quality Degradation. The conversion of undeveloped land to urban land uses would alter the types, quantities, and timing of contaminant discharges in stormwater runoff. Overall, the potential for the project to cause or contribute to long-term discharges of urban contaminants (e.g., oil and grease, trace metals and organics, trash) into the stormwater drainage system could increase compared with existing conditions if the system is not properly designed. However, as a public agency, the County would comply with federal and state stormwater management regulations and would incorporate appropriate BMPs into project design to prevent long-term water quality degradation. This would be a **less-than-significant** impact.

Construction and operation of a new jail would alter land uses at the project site, which could potentially increase the level of urban contaminants discharged into the stormwater drainage system. Some of the currently undeveloped land on the project site would be developed with permanent uses, including buildings; perimeter roads and fences; and new parking lots.

Table 3.6-1 shows the amount of impervious (paved) surfaces on the project site under existing and with-project conditions. As shown in the table, implementation of the proposed project on either the Pacific Coast or Boca parcels would result in a net reduction in impervious surfaces.

Portion of Project Site	Total Acreage	Impervious Surfaces (acres)		
		Existing	Proposed Project	Net Change
Pacific Coast parcel	27	16	10	-6
Boca parcel	55	22	10	-12

Source: Data compiled by Ascent Environmental in 2013 based on overlaying the conceptual layouts onto aerial photographs

Nonetheless, the proposed development has the potential to increase the pollutant load of stormwater discharges as a result of proposed land uses if the system is not properly designed. Anticipated pollutants associated with the project include trash, debris, heavy metals, and hydrocarbons from parking areas. In addition, potential pollutants associated with the project include sediment from pervious areas that would not be landscaped, pesticides from potential pest control activities, nutrients, fertilizers, oxygen-demanding substances from landscaped areas, and organic compounds from uncovered parking areas and roadways.

In accordance with federal and state stormwater management regulations, new construction and significant redevelopment must maintain pre-project hydrology and incorporate proper pollutant source controls, minimize pollutant exposure outdoors, and treat stormwater runoff through proper BMPs when source control or exposure protection are insufficient for reducing runoff pollutant loads. In accordance with SFRWQCB compliance guidelines, the County would be required to incorporate BMPs and LID stormwater management principles. Therefore, the County will prepare a SWPPP to include the incorporation of source control, site design, and treatment control BMPs to address anticipated and potential pollutants.

While the potential for development of the project site to cause or contribute to long-term discharges of urban contaminants into the stormwater drainage system could increase compared to existing conditions, the County would be required to comply with federal and state stormwater management regulations, which would require the incorporation of appropriate BMPs into the design of the development to prevent long-term water quality degradation. This would be a **less-than-significant** impact.

Mitigation Measure

No mitigation is required.

3.7 LAND USE

This section evaluates the environmental impacts from implementation of the proposed project on existing land uses. A description of the existing site characteristics and setting is followed by an analysis focused on the relationship between the proposed project and existing plans and policies, and the relationship with proposed land uses and existing adjacent land uses. Excerpts from relevant planning documents and ordinances are presented below.

3.7.1 REGULATORY SETTING

FEDERAL

No federal plans, policies, regulations, or laws related to land use apply to the proposed project.

STATE

STATE PLANNING AND ZONING LAWS

California Government Code Section 65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, and general document that describes plans for the physical development of a city or county and of any land outside its boundaries that, in the city's or county's judgment, bears relation to its planning. The general plan addresses a broad range of topics, including at a minimum land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the city's or county's vision for the area.

The State Zoning Law (California Government Code, Section 65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific zone district, are required to be consistent with the general plan. With respect to mineral resource zones (MRZs), the Surface Mining and Reclamation Act (SMARA) of 1975 was enacted by the California Legislature to address the need for a continuing supply of mineral resources, and to prevent or minimize the negative impacts of surface mining on public health, property, and the environment.

Special Report 146 (California Department of Conservation, Division of Mines and Geology 1986) was prepared under the authority of SMARA. A principal objective of this chapter was to classify land in the San Francisco-Monterey Bay region into MRZs based on guidelines adopted by the California State Mining and Geology Board. The Syar Napa Quarry, which is located adjacent to the project site, was classified as an MRZ as a result of the designation process. This designation process, in turn, has been designed to assist and guide local lead agencies in preserving essential mineral resources for future use through proper zoning ordinances.

Local general plan policies and zoning ordinances, as they relate to the proposed project, are summarized below.

LOCAL

NAPA COUNTY GENERAL PLAN

The *Napa County General Plan* (2008) serves as a broad framework for planning the future of Napa County. As shown in Exhibit 3.7-1, the project site is designated as "Study Area" in the Napa County General Plan (Napa County 2008:AG/LU 67).

The Agricultural Preservation and Land Use Element contains the following policies that are applicable to the proposed project:

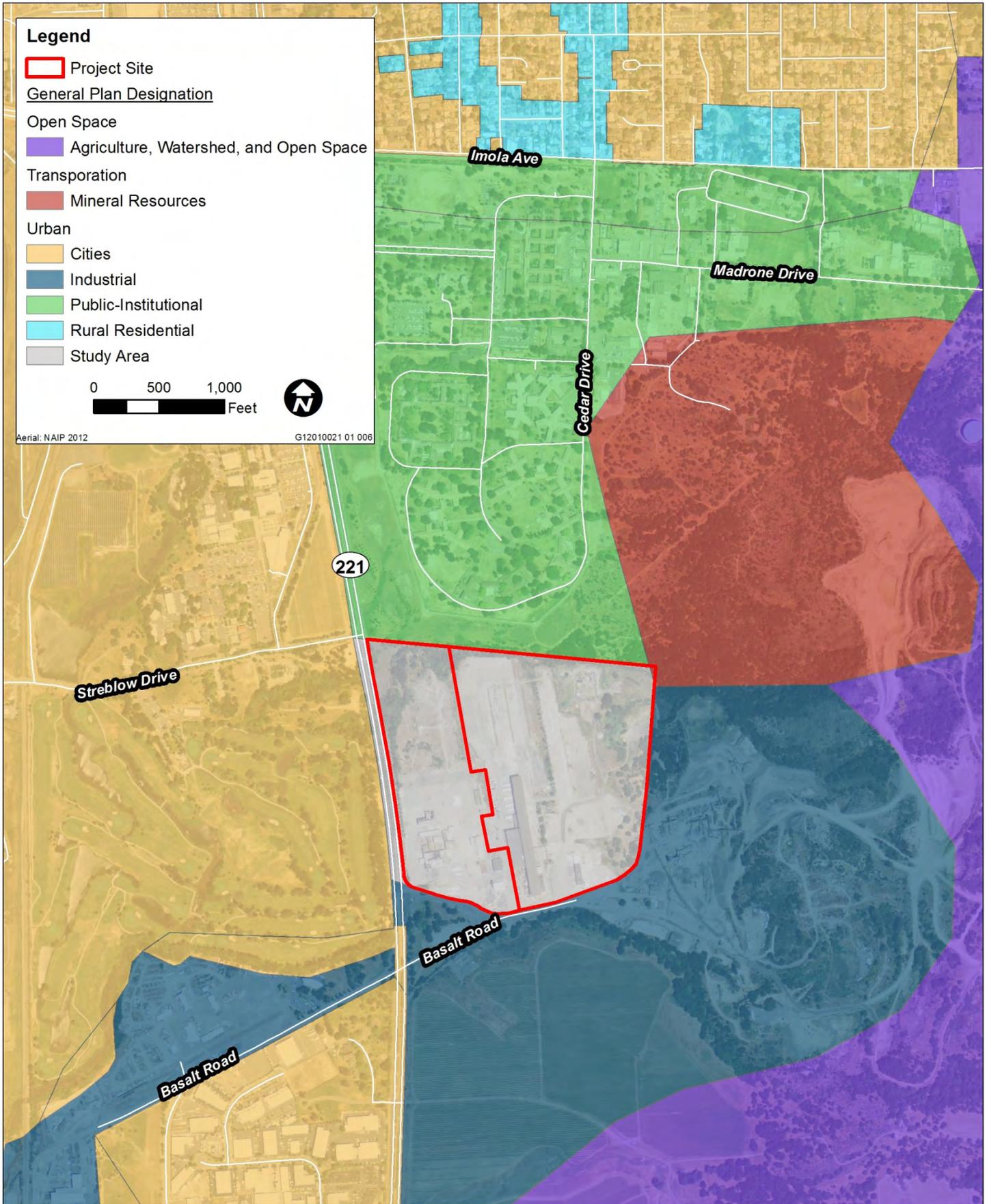
- ▲ **Policy AG/LU-52:** The following standards shall apply to lands designated as Study Area on the Land Use Map of this General Plan.
 - // **Intent:** This designation allows industrial uses to continue pursuant to existing zoning, but signals the need for further site- or area-specific planning to assess the potential for a mix of uses in this area. The Study Area designation is intended to be applied only to the portion of the Napa Pipe site that is not designated as Napa Pipe Mixed Use and to the Boca/Pacific Coast parcels in the unincorporated area south of the City of Napa, where sufficient infrastructure may be available to support mixed-use development.
 - // **General Uses:** All uses allowed in the Industrial land use category may be permitted.
 - // **Minimum Parcel Size:** Parcel sizes shall be as established for the Industrial designation.
 - // **Maximum Building Density:** Maximum building intensity shall be as established for the Industrial designation.
- ▲ **Policy AG/LU-94:** Sites designated as Study Area on the Land Use Map are urbanized sites adjacent to the City of Napa that shall be considered for revitalization and reuse by a mix of uses via site-specific planning. Site planning shall consider the availability and cost of urban services, opportunities for public access and recreation, impacts and benefits to Napa County and the City of Napa, and the potential for future annexation to the City.
 - // **Action Item AG/LU-94.1:** Prior to approving non-industrial development the County shall adopt development standards for the Pacific Coast/Boca and Napa Pipe sites which shall include, but may not be limited to, buffering and visual screening from existing industrial uses and Syar Quarry, design features that include physical buffers (e.g., vegetation, landscape features, or walls in unique circumstances), building placement and orientation in a manner that physically separates these sites from incompatible operations of adjacent uses (e.g., truck traffic, odors, stationary noise sources), and implementation of other measures to address noise and vibration. Standards for the Napa Pipe site shall ensure conformance with the Napa County Airport Land Use Compatibility Plan.

NAPA COUNTY CODE

The Napa County Zoning Ordinance, Title 18 of the County Code, establishes standards and regulations to implement the policies contained in the General Plan. The project site is zoned as Industrial (I) (Exhibit 3.7-2). The intent of the I classification is to provide an environment exclusively for and conducive to the development and protection of a variety of industrial uses such as administrative facilities, research institutions, and specialized manufacturing organizations to be located in areas suitable for industrial development.

AIRPORT LAND USE COMPATIBILITY PLAN

The Napa County Airport is located in unincorporated Napa County in the Airport Industrial Park, approximately 2.75 miles southwest of the project site, and approximately one mile west of Highway 29. The Napa County Airport Land Use Commission (ALUC) establishes land use policies for areas located within the flight path surrounding Napa County airports. As required by State Aeronautics Law, the ALUC reviews land use compatibility issues for development within airport influence zones guided by the Napa County *Airport Land Use Compatibility Plan* (ALUCP) (Napa County 1999). Airport compatibility issues include safety, noise, overflight, and airspace protection. According to the Compatibility Plan (Figure 3A in the ALUCP), the project site is located outside the compatibility zones by approximately 0.2 mile, and therefore they do not apply to the site.

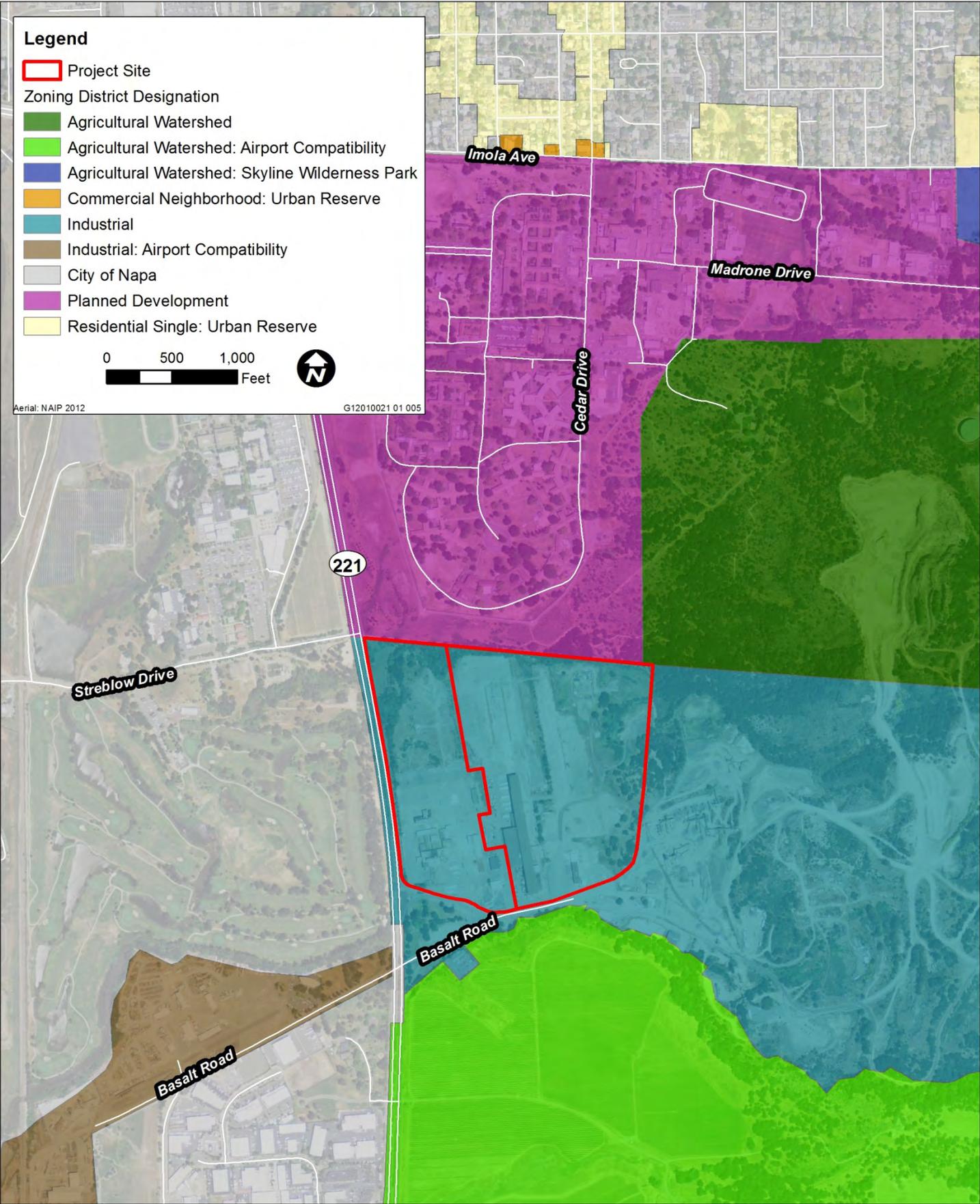


Source: Data downloaded from Napa County in 2013; Adapted by Ascent Environmental in 2013

Exhibit 3.7-1

Napa County General Plan Designations





Source: Data downloaded from Napa County in 2013; Adapted by Ascent Environmental in 2013

Exhibit 3.7-2

Napa County Zoning Designations



LOCAL AGENCY FORMATION COMMISSION

The Local Agency Formation Commission (LAFCO) is a state-mandated local agency that administers California Government Code Sections 56000 et. seq., also known as the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000. The Act charges LAFCO with the responsibility to encourage the logical formation and development of local agencies in a manner that preserves open-space and agricultural lands and discourages urban sprawl.

A key objective of LAFCO includes the orderly formation of local government agencies that balance the competing needs in California for efficient services, affordable housing, economic opportunity, and conservation of natural resources. Other objectives include preserving agricultural land resources and discouraging urban sprawl.

LAFCO has created a set of Policy Determinations for Napa County. These Policy Determinations relate to the preservation of agriculture and open space lands; the promotion of orderly, well-planned development; spheres of influence; Countywide policies for urban development and service areas; and annexations. These policies address LAFCO's intent to deny the premature conversion of designated agricultural and open space lands to urban uses; provide for the effective, efficient, and economic provision of public services; outline policies for Special District Spheres; and define criteria for various types of annexations.

LAFCO is responsible for approving requests by cities and special districts to extend municipal services, such as water or sewer, outside their jurisdictional boundaries by contract or agreement with property owners (Government Code Section 56133). This process is intended to accommodate the logical extension of municipal services when annexation of the affected territory is not available or appropriate. Written requests to authorize an outside service agreement shall be filed with LAFCO's Executive Officer.

3.7.2 ENVIRONMENTAL SETTING

REGIONAL SETTING

Napa County is located north of the San Francisco Bay Area, in California. Napa County is bounded on the north and northeast by Yolo County, on the south and southeast by Solano County, on the west and northwest by Lake County, and on the west by Sonoma County. Napa County is comprised of approximately 506,000 acres, approximately 479,000 (95%) of which is included within the unincorporated areas of the County (Napa County 2007:4.2-1). The remaining area is distributed among the five incorporated areas in the County: City of American Canyon, City of Calistoga, City of Napa, City of St. Helena, and the Town of Yountville.

EXISTING LAND USES

PROJECT SITE

The project site is located in unincorporated Napa County, approximately two miles from downtown Napa (see Exhibits 2-1 and 2-2). The project site consists of two parcels totaling approximately 82 acres, of which approximately 15 to 20 acres would be used for jail construction. The Boca parcel (eastern parcel) encompasses approximately 55 acres and the Pacific Coast parcel (western parcel) encompasses approximately 27 acres. Access to both parcels is provided by Napa-Vallejo Highway/State Route (SR) 221 and the private roadway serving Syar Napa Quarry.

Portions of both parcels are currently used for equipment storage, retail and wholesale of building materials, and an impound yard for a local towing company. The eastern parcel is dominated by a large, oblong, derelict warehouse. The western parcel contains a complex of eight abandoned, industrial buildings; two small modern buildings; and a rectangular, open bay, partitioned sand/gravel storage area. The parcels have little or no

groundcover due in part to the development and disturbance associated with the industrial and commercial activities on-site. There are, however, interspersed patches of native and introduced species at the northeast corner of the property, adjacent to the River-to-Ridge Trail and the Syar Napa Quarry. The site is relatively level, except for the easternmost area, which slopes up to the adjacent rock quarry. The majority of the site has been previously graded, graveled, and paved.

The project site is designated as “Study Area” in the Napa County General Plan (Napa County 2008:AG/LU 67). This designation is described above under “Napa County General Plan,” in Section 3.7.1, “Regulatory Setting.”

ADJACENT LAND USES

The Syar Napa Quarry, which is owned and operated by Syar Industries, Inc. (Syar), is located immediately adjacent to the project site. Syar also owns and maintains a private driveway directly across from Basalt Road, which provides access to the quarry as well as to the project site¹. The Syar Napa Quarry is the most significant quarry in Napa County, producing mineral aggregate that is processed and sold as a variety of building and highway construction materials. The quarry operations closest to the project site include the main aggregate processing plant, two hot mix asphalt manufacturing plants, and the primary customer load out area. A proposed expansion at the Syar Napa Quarry is currently undergoing environmental review, with an EIR scheduled to be publically released in summer 2013.

Other surrounding uses include vineyards to the south; recreation (River-to-Ridge Trail) and public institutional (Napa State Hospital) uses to the north; SR 221 and recreational (Napa Municipal Golf Course at John F. Kennedy Memorial Park) uses to the west; educational (Napa Valley Community College) uses to the northwest; and a cemetery (Napa Valley Memorial Park Mortuary) and office/industrial (Napa Valley Corporate Center) to the southwest. The closest residential areas are located approximately 0.7 mile north of the site just north of the Napa State Hospital (Terrace-Shurtleff area), and approximately 0.9 mile southwest of the site west of SR 221 and east of the Napa River (River East area). Exhibit 2-2 illustrates the land uses in the project area.

Additional urban development associated with the Napa Pipe Project is envisioned by the County for a 154-acre area adjacent to the Napa River, approximately 0.65 mile southwest of the project site.² Current forecasts estimate development of 700 to 945 new dwelling units, as well as neighborhood-serving retail, a 150-room hotel, senior/assisted living, office, trails, public open space, school, and a 17.5-acre area for a Costco warehouse store.

3.7.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

METHODS AND ASSUMPTIONS

Evaluation of potential land use impacts are based on a review of documents pertaining to the project site, including the *Napa County General Plan (2008)* and the Napa County Code (Zoning Ordinance). In determining the level of significance, this analysis assumes that the proposed project would comply with relevant state and local ordinances and regulations, as well as the General Plan policies presented above.

¹ Both the Pacific Coast and Boca parcels have access easements for use of this entrance road.

² Napa County prepared and certified an EIR to evaluate the potential impacts of the Napa Pipe Project. A General Plan amendment and rezoning was approved by the County on June 4, 2013.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, a land use impact is considered significant if implementation of the proposed project would do any of the following:

- ▲ physically divide an established community;
- ▲ conflict with any applicable land use plan, policy, or regulation of any agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or
- ▲ conflict with any applicable habitat conservation plan or natural community conservation plan.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

There are no existing landscape-level Habitat Conservation Plans or Natural Community Conservation Plans within Napa County. Thus, implementation of the proposed project would not conflict with any such plans. This issue will not be discussed further in this DEIR.

IMPACT ANALYSIS

Impact 3.7-1	Potential for Division of an Established Community. The project site is not located within or surrounded by an established community. Further, project implementation would not result in any physical barriers that would divide an established community. Therefore, this impact would be <i>less than significant</i> .
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The project site is located in unincorporated Napa County, approximately two miles from downtown Napa. Consistent with its industrial zoning, portions of the project site are currently used for equipment storage, retail and wholesale of building materials, and an impound yard for a local towing company. The closest residential areas are located north of the Napa State Hospital (Terrace-Shurtleff area) and west of SR 221 and east of the Napa River (River East area), approximately 0.7 mile and 0.9 mile, respectively, from the project site. Additional urban development associated with the Napa Pipe Project is envisioned by the County for a 154-acre area adjacent to the Napa River, approximately 0.65 mile southwest of the project site.

These existing and proposed residences would be physically separated from the project site by the existing Napa State Hospital and SR 221. The proposed project components would be located entirely on the industrial-zoned project site. A jail by its very nature is a place in which people are physically confined, separated from the surrounding community. The proposed project would be designed to be physically separated from surrounding land uses via the installation of fencing, walls, and vegetative screening. As mentioned in Chapter 2, "Project Description," the proposed project would include roadway improvements (associated with a new signal along SR 221 at the main access across from Basalt Road) and extension of utility infrastructure. These improvements would be developed consistent with County design standards and not result in any physical barriers that would divide established communities. Therefore, this impact would be **less than significant**.

Mitigation Measure

No mitigation is required.

Impact 3.7-2	Conflict with Relevant Plans, Policies, and Zoning Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect. The <i>Napa County General Plan</i> (2008) includes policies specific to potential non-industrial use of the project site. These policies require placement and orientation of facilities in a manner that avoids incompatibility with adjacent uses. The proposed project would be designed to provide for sufficient buffering (through distance, screening, and other mitigation) to avoid incompatibility with adjacent uses. Therefore, this impact would be <i>less than significant</i> .
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The project site is located within unincorporated Napa County. Therefore, land uses on the project site are regulated by the *Napa County General Plan* (2008) and Napa County Code (Zoning Ordinance).

Policy AG/LU-52 of the County General Plan contains standards that apply to lands designated as “Study Area,” which includes the project site. The focus of the standards, however, is on the continued industrial use of the project site. Because the proposed project includes changing the current use of the site from industrial to public institutional, this policy would not apply.

Action Item AG/LU-94.1 of the County General Plan is specific to potential non-industrial use of the project site. This policy states that prior to approving non-industrial development the County shall adopt development standards which shall include, but may not be limited to:

- ▲ buffering and visual screening from existing industrial uses and Syar Napa Quarry,
- ▲ design features that include physical buffers (e.g., vegetation, landscape features, or walls in unique circumstances),
- ▲ building placement and orientation in a manner that physically separates these sites from incompatible operations of adjacent uses (e.g., truck traffic, odors, stationary noise sources), and
- ▲ implementation of other measures to address noise and vibration.

Policy CON-37 of the County General Plan expresses the County’s intent to ensure the long-term production and supply of mineral resources and aggregate resources by, among other things, protecting resource areas from incompatible uses.

The proposed project includes new landscaping that would provide visual screening from surrounding land uses (see Section 3.2, “Aesthetics”). Proposed physical buffers include perimeter fencing around the occupied portion of the site, and additional security fencing around the exercise yards. As noted in Chapter 2, “Project Description,” two conceptual layouts are being considered for the proposed project: one on the Boca parcel, which is more distant from SR 221, but closer to the quarry; and one on the Pacific Coast parcel, which is closer to SR 221, but more distant from the quarry. Both site layout options are nearby to the entrance road for the quarry, which supports heavy truck traffic related to quarry operations. Mitigation measures described in Sections 3.3, “Air Quality,” and 3.8, “Noise,” would be adopted and implemented by the County to address potential air quality and noise/vibration impacts, respectively, of the proposed project.

Because the proposed project would be designed to provide for sufficient buffering (through distance, screening, and other mitigation) to avoid incompatibility with adjacent uses, this impact would be **less than significant**.

Mitigation Measure

No mitigation is required.

3.8 NOISE

This section includes a description of acoustic fundamentals, existing ambient noise conditions, and an analysis of potential short- and long-term noise impacts associated with implementation of the proposed project. Mitigation measures are recommended, as necessary, to reduce potentially significant adverse noise impacts. The information contained in this section is based, in part, on documents prepared by Napa County and data from Section 3.9, "Transportation and Traffic."

3.8.1 REGULATORY SETTING

Although no specific regulations exist with regards to vibration noise, various federal and State agencies have developed guidelines to prevent human disturbance/annoyance and damage to structures from vibration sources (e.g., blasting, heavy-duty construction equipment). These guidelines are presented in this section and used as a basis for the impact analysis.

The following discussion on blasting regulations is provided in light of the adjacent Syar Napa Quarry mining operation.

FEDERAL

UNITED STATES BUREAU OF MINES

In 1974, the United States Bureau of Mines (USBM) began a study to gather and update available blast vibration data. Work was included in the area of structural and human response to vibration. This resulted in the publishing in 1980 of USBM RI 8507, "Structure Response and Damage Produced by Ground Vibration From Surface Mine Blasting." USBM recommends a maximum safe overpressure of 0.014 psi (134 decibels [dB] linear, unweighted) for residential structures. The first occurrence of airblast damage is usually the breakage of poorly mounted windows.

OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT

The Office of Surface Mining Reclamation and Enforcement (OSMRE) published a document titled "Blasting Guidance Manual" that addresses the negative effects of blasting. The OSMRE Guidance Manual includes noise and vibration limits with respect to building damage and human perception. The OSMRE airblast noise limits with respect to building damage are similar to those of the USBM, as described above. The OSMRE airblast limits for building damage may apply to the location of any dwelling, public building, school, church, community or institutional building in connection with blasting under the jurisdiction of the OSMRE. Based on OSMRE data, a 129 dB peak noise level is utilized for evaluating building damage impacts associated with the project's blasting related activities. This airblast limit set forth by the OSMRE is based on the minimal probability of superficial damage to residential type structures, and also takes into consideration subjective human response. Per the OSMRE, if an airblast can be kept at or below 120 dB, then annoyance would be minimal. Thus, for the purpose of this analysis, 120 dB is utilized in connection with the analytical evaluation of the potential human annoyance from the project's blasting generated noise level.

U.S. DEPARTMENT OF TRANSPORTATION

To address the human response to ground vibration (from non-blasting sources), the Federal Transit Administration (FTA) of the U.S. Department of Transportation (DOT) has set forth guidelines for maximum-acceptable vibration criteria for different types of land uses. Among these guidelines are the following:

- ▲ 65 vibration vibration-decibels (VdB), referenced to 1 micro-inch per second (μ in/sec) and based on the root mean square (RMS) velocity amplitude, for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities)
- ▲ 80 VdB for residential uses and buildings where people normally sleep
- ▲ 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices) (FTA 2006).

STATE

CALTRANS

The California Department of Transportation (Caltrans) also provides guidelines for assessing human response to blasting related activities and the potential for structural damage related to blasting in a publication titled, “Transportation-and-Construction-Induced Vibration Manual.” As indicated by Caltrans in this publication, human response to vibration and overpressures from blasting is difficult to quantify. Furthermore, it is anticipated that ground and air overpressures can be felt at levels that are well below those required to produce any damage to structures.

Caltrans also provides guidelines to limit ground vibration based on the age and/or physical condition of structures that would be located in close proximity to any blasting activities. These are shown in Table 3.8-1.

Table 3.8-1 Human Response to Blasting		
Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources ¹	Continuous/Frequent Intermittent Sources ²
Extremely fragile buildings, ruins ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Notes:
¹ Transient sources created by a single isolated vibration event, such as blasting
² Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
 Source: Caltrans 2004

LOCAL

NAPA COUNTY GENERAL PLAN

The following policies of the *Napa County General Plan* Noise Element are applicable to the project.

- ▲ **Policy CC- 37:** Residential and other noise-sensitive activities shall not be located where noise levels exceed the standards contained in the Noise Element without provision of noise attenuation features that result in noise levels meeting the current standards of the County for exterior and interior noise exposure.

- Policy CC-38:** The following are the County’s standards for maximum exterior noise levels for various types of land uses established in the County’s Noise Ordinance. Additional standards are provided in the Noise Ordinance for construction activities (i.e., intermittent or temporary noise) (Table 3.8-2).

Land Use Type	Time Period	Noise Level (dBA) by Noise Zone Classification ¹		
		Rural	Suburban	Urban
Single-Family Homes and Duplexes ²	10 p.m. to 7 a.m.	45	45	50
	7 a.m. to 10 p.m.	50	55	60
Multiple Residential 3 or More Units Per Building (Triplex) ²	10 p.m. to 7 a.m.	45	50	55
	7 a.m. to 10 p.m.	50	55	60
Office and Retail	10 p.m. to 7 a.m.	60		
	7 a.m. to 10 p.m.	65		
Industrial and Wineries ³	Anytime	75		

Notes: dBA =A-weighted decibels
¹ noise levels not to be exceeded more than 30 minutes in any hour
² For the purposes of implementing this policy, standards for residential uses shall be measured at the housing unit in areas subject to noise levels in excess of the desired levels shown above.
³ Industrial noise limits are intended primarily for use at the boundary of industrial zones rather than for noise reduction at the industrial use.
 Source: Napa County 2008

The *Napa County General Plan* provides noise compatibility guidelines for use in determining the general compatibility of planned land uses, shown in Table 3.8-3.

Land Use	Completely Compatible	Tentatively Compatible	Normally Incompatible	Completely Incompatible
Residential	Less than 55 dBA	55-60 dBA	60-75 dBA	Greater than 75 dBA
Commercial	Less than 65 dBA	65-75 dBA	75-80 dBA	Greater than 80 dBA
Industrial	Less than 70 dBA	70-80 dBA	80-85 dBA	Greater than 85 dBA

Notes: dBA=A-weighted decibels
¹ Completely Compatible means that the specified land use is satisfactory and both the indoor and outdoor environments are pleasant.
² Tentatively Compatible means that noise exposure may be of concern, but common building construction practices will make the indoor living environment reasonably pleasant.
³ Normally Incompatible means that noise exposure warrants special attention, and new construction or development should generally be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features are included in the design. Careful site planning or exterior barriers may be needed to make the outdoor environment tolerable.
⁴ Completely Incompatible means that the noise exposure is so severe that new construction or development should generally not be undertaken.
 Source: County of Napa 2008

- Policy CC-40:** Property owners proposing new noise- or vibration-sensitive uses in proximity to existing industrial activities such as Syar Quarry, haul roads leading to the quarry, and within 100’ of railroad tracks shall retain the services of a qualified noise expert to evaluate the potential for noise- and vibration-related land use conflicts. The expert shall recommend methods to ensure that residents and occupants will not be exposed to (a) excessive vibration levels that are disruptive or cause structural damage, or (b) noise in excess of the standards provided in this General Plan. Other methods to address noise and vibration may include, but are not limited to, building setbacks, site design and building orientation, soil compaction/grouting, noise barriers, buffers, building and foundation design, and incorporation of noise insulation. Compliance with this policy shall be demonstrated prior to issuance of a building permit.

The Napa County General Plan contains standards for acceptable indoor intermittent noise levels for various types of land uses. These standards should receive special attention when projects are considered in “Tentatively Compatible” or “Normally Incompatible” areas. New uses shall incorporate design features to ensure that these standards are met. Interior noise level criteria for intermittent noise are shown in Table 3.8-4.

Land Use Type	Acceptable Noise Level (dBA CNEL)
Residential (Single- and Multi- Family)	
Living Areas, Daytime	60 dBA
Living Areas, Nighttime	55 dBA
Sleeping Areas	45 dBA
School Classrooms or Library	55 dBA
Church Sanctuary	45 dBA
Commercial, Educational, Office, Light and Heavy Industrial, Warehousing	Conform with applicable state and federal workplace safety standards
Notes: dBA = A-weighted decibels, CNEL =Community Noise Equivalent Level Source: Napa County 2008	

- ▲ **Policy CC-44:** The County shall require that appropriate noise mitigation measures be included when new residential developments are to be built in close proximity to significant noise sources.

NAPA COUNTY CODE

Section 8.16.060 – Interior noise standards

Section 8.16.060 of the Napa County Code identifies maximum permissible dwelling interior sound levels for residential uses. Daytime (7 a.m. – 10 p.m.) maximum interior noise levels for residential uses are limited to 60 A-weighted decibels (dBA); nighttime (10 p.m. – 7 a.m.) maximum interior noise levels are limited to 55 dBA. Section 8.16.060 indicates that no person shall operate or cause to be operated within a dwelling unit any source of sound or allow creation of any noise which causes exceedance of these noise levels for a cumulative period of more than 5 minutes in any hour, or these noise standards plus 5 decibels (dB) for a cumulative period of more than 1 minute in any hour, or these noise standards plus 10 dB for the maximum measured ambient noise for any period of time.

Section 8.16.070 – Exterior noise limits

Section 8.16.070 of the Napa County Code (Napa County 2013) identifies the noise standards for the various categories of land use identified by the noise control office (see Table 3.8-2). Section 8.16.070 states that no person shall operate, or cause to be operated, any source of sound at any location within the unincorporated area of the county, or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level, when measured on any other property, either incorporated or unincorporated, to exceed:

- ▲ the noise standard for that land use (see Table 3.8-2) for a cumulative period of more than 30 minutes in any hour;
- ▲ or the noise standard plus five dB for a cumulative period of more than 15 minutes in any hour;
- ▲ or the noise standard plus ten dB for a cumulative period of more than 5 minutes in any hour;

- ▲ or the noise standard plus fifteen dB for a cumulative period of more than 1 minute in any hour;
- ▲ the noise standard plus twenty dB or the maximum measured ambient level, for any period of time.

In order to compensate for the character of sound, Section 8.16.070 states that if an offensive noise, as judged by the noise control officer, contains a steady, audible tone such as a whine, screech or hum, or is a repetitive noise such as hammering or riveting, or contains music or speech, the standard limits (see Table 3.8-2) shall be reduced by five dB, but not lower than forty-five.

Section 8.16.080 – Construction or Demolition

Section 8.16.080 of the Napa County Code identifies noise limits for construction activities, allowable in excess of the standard noise limits identified in Table 3.8-2. Specifically, Section 3.16.080 regulates noise generated by operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between the hours of 7 p.m. and 7 a.m., such that the sound therefrom creates a noise disturbance across a residential or commercial real property line, except for emergency work of public service utilities or by variance issued by the appropriate authority (Table 3.8-5).

	Residential	Commercial	Industrial
Daily: 7 a.m. to 7 p.m.	75 dBA	80 dBA	85 dBA
Daily: 7 p.m. to 7 a.m.	60 dBA	65 dBA	70 dBA

Source: Napa County 2013

CITY OF NAPA

The project site is located in an unincorporated area of Napa County; however, the City of Napa city limit is located directly across SR 221 from the project site. Although the City of Napa does not have jurisdiction over the proposed project, the applicable City standards are identified in this analysis.

The *City of Napa General Plan* (City of Napa 2010:8-35), establishes noise standards for various land uses. Table 3.8-6 presents the standards that would apply to the uses located across SR 221 from the project site.

	Normally Acceptable Noise Level	Conditionally Acceptable Noise Level
Schools, Libraries, and Churches	Up to 70 dB L _{dn}	Up to 70 dB L _{dn}
Golf Courses	Up to 75 dB L _{dn}	Up to 80 dB L _{dn}
Office Buildings, Business Commercial, and Professional	Up to 70 dB L _{dn}	Up to 77 dB L _{dn}
Industrial, Manufacturing, Utilities, and Agriculture	Up to 75 dB L _{dn}	Up to 80 dB L _{dn}

Notes: dB = decibel, L_{dn} = Day-Night Noise Level
Source: City of Napa 2010

Section 8.08.025 of the City's Municipal Code restricts noise generated by construction activities that take place outside of the hours between 7 a.m. and 7 p.m. Monday through Friday, and on weekends and holidays outside the hours of 8 a.m. to 4 p.m.

3.8.2 ENVIRONMENTAL SETTING

ACOUSTIC FUNDAMENTALS

Acoustics is the scientific study that evaluates perception and properties of sound waves. Sound that is loud, disagreeable, unexpected, or unwanted is generally defined as noise. Common sources of environmental noise and associated noise levels are presented in Table 3.8-7.

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet	100	
Gas lawnmower at 3 feet	90	
Diesel truck moving at 50 mph at 50 feet	80	Food blender at 3 feet, Garbage disposal at 3 feet
Noisy urban area, Gas lawnmower at 100 feet	70	Vacuum cleaner at 10 feet, Normal speech at 3 feet
Commercial area, Heavy traffic at 300 feet	60	
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, Bedroom at night, Concert hall (background)
Quiet rural nighttime	20	Broadcast/Recording Studio
	10	
Threshold of Human Hearing	0	Threshold of Human Hearing

Notes: dBA=A-weighted decibels; mph=miles per hour
Source: California Department of Transportation 2009:2-21

SOUND PROPERTIES

Sound levels are measured using the decibel scale, developed to relate to the range of human hearing. A decibel is logarithmic; it does not follow normal algebraic methods and cannot be directly summed. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). A sound level increase of 10 dB corresponds to 10 times the acoustical energy, and an increase of 20 dB equates to a 100 fold increase in acoustical energy.

The human ear is not equally sensitive to loudness at all frequencies in the audible spectrum. To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed, identified as A through E. There is a strong correlation between the way humans perceive sound and A-weighted sound levels. For this reason the A-weighted sound levels are used to predict community response to noise from the environment, including noise from transportation and stationary sources, and are expressed as A-weighted decibels. All sound levels discussed in this section are A-weighted decibels unless otherwise noted.

Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks, and airplanes and stationary sources such as activity at construction sites, machinery, and commercial and industrial operations. As sounds travel through the atmosphere from the source to the receiver, noise levels attenuate

(i.e., decrease) depending on ground absorption characteristics, atmospheric conditions, and the presence of physical barriers. Noise generated from mobile sources generally attenuate at a rate of 4.5 dB per doubling of distance from the source. Noise from stationary sources spread with more spherical dispersion patterns that attenuate at a rate of 6 to 7.5 dB per doubling of distance from the source.

Atmospheric conditions such as wind speed, wind direction, turbulence, temperature gradients, and humidity also alter the propagation of noise and affect levels at a receiver. Furthermore, the presence of a barrier (e.g., topographic feature, intervening building, and dense vegetation) between the source and the receptor can provide substantial attenuation of noise levels at the receiver. Both natural (e.g., berms, hills, and dense vegetation) and human-made features (e.g., buildings and walls) may function as noise barriers.

All buildings provide some exterior-to-interior noise reduction. A building constructed with a wood frame and a stucco or wood sheathing exterior typically provides a minimum exterior-to-interior noise reduction of 25 dB with its windows closed, whereas a building constructed of a steel or concrete frame, a curtain wall or masonry exterior wall, and fixed plate glass windows of one-quarter-inch thickness typically provides an exterior-to-interior noise reduction of 30–40 dB with its windows closed (California Department of Transportation [Caltrans] 2002:7-37).

COMMON NOISE DESCRIPTORS

The intensity of environmental noise fluctuates over time, and several different descriptors of time-averaged noise levels are used. The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of both the noise source and the environment. The noise descriptors most often used to characterize environmental noise are defined below (Caltrans 2009:2-52).

- ▲ Equivalent Noise Level (L_{eq}): The average noise level during a specified time period; that is, the equivalent steady-state noise level in a stated period of time that would contain the same acoustic energy as the time-varying noise level during the same period (i.e., average noise level).
- ▲ Maximum Noise Level (L_{max}): The highest instantaneous noise level during a specified time period.
- ▲ Minimum Noise Level (L_{min}): The lowest instantaneous noise level during a specified time period.
- ▲ Day-Night Noise Level (L_{dn}): The 24-hour L_{eq} with a 10-dB penalty applied during the noise-sensitive hours from 10 p.m. to 7 a.m., which are typically reserved for sleeping.
- ▲ Community Noise Equivalent Level (CNEL): Similar to the L_{dn} described above with an additional 5-dB penalty applied during the noise-sensitive hours from 7 p.m. to 10 p.m., which are typically reserved for evening relaxation activities.
- ▲ Single Event Noise Levels (SEL): Sounds that occur in an irregular or non-repetitive manner, which makes them difficult to anticipate; these are usually measured by L_{max} noise levels.

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 noise environment. The L_{eq} , or average noise level over a given period of time, is the foundation of composite noise descriptors such as L_{dn} and CNEL, which effectively indicate community response to ambient noise levels.

EFFECTS OF NOISE ON HUMANS

Excessive and chronic (long-term) exposure to elevated noise levels can result in auditory and non-auditory effects on humans. Auditory effects of noise on people are those related to temporary or permanent hearing loss caused by loud noises. Non-auditory effects of exposure to elevated noise levels are those related to behavior and physiology. The non-auditory behavioral effects of noise on humans are primarily subjective

effects such as annoyance, nuisance, and dissatisfaction, which lead to interference with activities such as communications, sleep, and learning. The non-auditory physiological health effects of noise on humans have been the subject of considerable research into possible correlations between exposure to elevated noise levels and health problems, such as hypertension and cardiovascular disease. The mass of research implies that noise-related health issues are predominantly the result of behavioral stressors and not a direct noise-induced response. The extent to which noise contributes to non-auditory health effects remains a subject of considerable research, with no definitive conclusions.

Negative effects of noise exposure include physical damage to the human auditory system, interference with daily activities, sleep disturbance, and disease. Exposure to noise may result in physical damage to the auditory system, which may lead to gradual or traumatic hearing loss. Gradual hearing loss is caused by sustained exposure to moderately high noise levels over a period of time; traumatic hearing loss is caused by sudden exposure to extremely high noise levels over a short period. Gradual and traumatic hearing loss both may be permanent. In addition, noise may interfere with or interrupt sleep, relaxation, recreation, and communication. Although most interference may be classified as annoying, the inability to hear a warning signal (for example) may be considered dangerous. Noise may also be a contributor to diseases associated with stress, such as hypertension, anxiety, and heart disease. The degree to which noise contributes to such diseases depends on the frequency, bandwidth, and level of the noise and the exposure time (Caltrans 2009:2-65, 2-66).

GROUND VIBRATION

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Sources of ground vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, and landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, and construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery) or transient in nature (e.g., explosions). Vibration levels can be depicted in terms of amplitude and frequency, relative to displacement, velocity, or acceleration.

Vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root mean square (RMS) vibration velocity. Peak particle velocity is defined as the maximum instantaneous positive or negative peak of a vibration signal. Peak particle velocity is typically used in the monitoring of transient and impact vibration and has been found to correlate well with the stresses experienced by buildings (Federal Transportation Administration [FTA] 2006:7-3; Caltrans 2004:5). PPV and RMS vibration velocity are normally described in inches per second (in/sec).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2006:7-3). This is based on a reference value of 1 micro (μ) in/sec.

The typical background vibration-velocity level in residential areas is approximately 50 VdB. Ground vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2006).

Table 3.8-8 describes the general human response to different levels of ground vibration-velocity levels.

Vibration-Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Notes: VdB = vibration decibels referenced to 1 μ inch/second and based on the root mean square (RMS) velocity amplitude.
Source: FTA 2006:7-8

BLASTING

The following discussion on blasting is provided in light of the adjacent Syar Napa Quarry mining operation.

When a blast is detonated, only a portion of the energy is consumed in breaking up and moving the rock. The remaining energy is dissipated in the form of seismic waves expanding rapidly outward from the blast, either through the ground (as vibration) or through the air (as air overpressure or airblast). While a blaster can quite easily design a blast to stay well below any vibration or air overpressure levels that could cause damage, it is virtually impossible to design blasts that are not perceptible by people in the vicinity.

Noise from blasting or “blast noise” is primarily composed of sound pressures at frequencies below the threshold-of-hearing for humans (16 to 20 Hz). Therefore, blast noise is not typically measured with an A-weighted scale (dBA), but rather a linear scale expressed simply as dB.

Typical acoustical noise analyses conducted for the purpose of monitoring compliance with local noise ordinances almost always use weighted scales that discriminate against low frequency noise. Thus, A-weighted scales will usually record significantly lower levels of noise than linear scaled noise levels. For this reason, blast noise (dB) cannot be compared to local noise ordinances that use a dBA scale. Table 3.8-9 shows the typical human response to ground vibration and noise from blasting.

Average Human Response	Vibration PPV (in/sec)	Blast Noise Airblast (dB)
Barely to distinctly perceptible	0.02-0.10	50-70
Distinctly to strongly perceptible	0.10-0.50	70-90
Strongly perceptible to mildly unpleasant	0.50-1.00	90-120
Mildly to distinctly unpleasant	1.00-2.00	120-140
Distinctly unpleasant to intolerable	2.00-10.00	140-170

Source: Caltrans 2004

Overpressure at higher frequencies can be startling in a quiet surrounding, but it will not normally cause damage unless it exceeds approximately 150 dB (linear, unweighted). Low frequency overpressures, although they might be below the range of human hearing, can impact the side of a residential structure, resulting in windows rattling and other noise. On hearing this noise, the average homeowner will not be able to distinguish between air overpressure or ground vibration as the source but will generally incorrectly attribute the effect to the latter (Caltrans 2004).

SENSITIVE LAND USES

Noise-sensitive land uses generally include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern due to the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Parks, schools, historic sites, cemeteries, and recreation areas are also generally considered sensitive to increases in exterior noise levels. Places of worship, and other similar places where low interior noise levels are of great importance, are also considered noise-sensitive. Noise-sensitive land uses are also considered to be vibration-sensitive. Specifically, commercial and industrial buildings where ground vibration (including vibration levels that may be well below those associated with human annoyance) could interfere with operations within the building would be most sensitive to ground vibration (e.g., hospitals, laboratories).

The adjacent Napa State Hospital is considered a sensitive receptor to noise and vibration, and the most conservative (single-family residential) noise standards are used to evaluate potential project-related noise-and-vibration-related impacts on this use. The Napa State Hospital is also the nearest sensitive receptor to both project site options. (It should be noted that this noise analysis also considers inmates associated with the proposed jail to be sensitive receptors.)

SOURCES AND AMBIENT LEVELS

The existing noise environment in the project area is primarily influenced by transportation noise from vehicle traffic on the roadway systems [i.e., State Route (SR) 221 and Basalt Road/Main Access]. Other noise sources that contribute to the existing noise environment include existing activities at the nearby Syar Napa Quarry, and to a much lesser extent, noise from typical environmental activities, such as birds chirping. These noise sources are also considered sources of vibration, with the exception of ambient noise from birds and wildlife, in the project area.

Existing traffic noise levels were modeled for major roadway segments in the project vicinity in accordance with the U.S. Department of Transportation Federal Highway Administration (FHWA) Traffic Noise Model (FHWA 2006), along with project specific traffic data. Traffic noise modeling results (contained in Appendix E) are based on existing (2011) average daily traffic volumes and speeds from Caltrans (Caltrans 2011a). Modeling assumes no natural or human-made shielding. The extent to which existing land uses are affected by existing traffic noise depends on their respective proximity to the roadways and their sensitivity to noise.

Table 3.8-10 summarizes the modeled existing traffic noise levels at 100 feet from the centerline of SR 221 (the primary roadway affected by the proposed project) and identifies the distances from the roadway centerline to the 70-dB, 65-dB, 60-dB, and 55-dB CNEL/L_{dn} traffic noise contours.

Roadway	Location	CNEL/L _{dn} (dB) at 100 feet from Road Centerline	Distance (feet) from Roadway Centerline to CNEL/L _{dn} (dB)			
			70	65	60	55
SR 221	South of Basalt Road	74.5	282	893	2,824	8,929

Notes: CNEL = Community Noise Equivalent Level; dB = A-weighted decibels; L_{dn} = day-night average noise level.
Refer to Appendix D for detailed modeling input data and output results.
Source: Data modeled by Ascent Environmental in 2013

Two short-term and one long-term (24-hour) noise measurement were taken on May 30, 2013 through May 31, 2013. Locations near and on the potential site options were chosen to capture the noise levels from various

noise sources (e.g., traffic on SR 221, traffic on Basalt Road, and the adjacent Syar Napa Quarry). Tables 3.8-11 and 3.8-12 and Exhibit 3.8-1, summarize the existing ambient noise levels in the project vicinity. Sound level measurement locations are shown on Exhibit 3.8-2.

Table 3.8-11 Summary of Short-Term Existing Ambient Noise Level Measurements

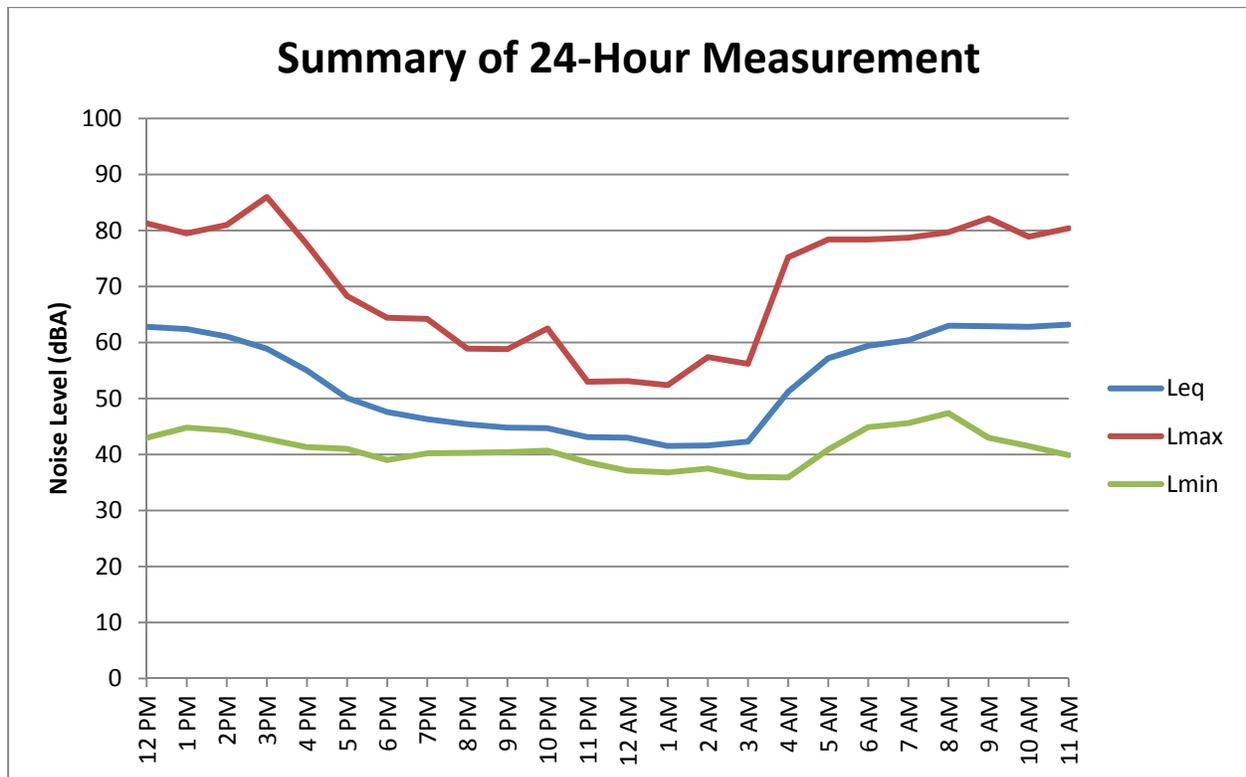
Location	Start (Date/Time)	Stop (Date/Time)	dB		
			L _{eq}	L _{max}	L _{min}
Site ST1	May 31, 2013/ 12:30 PM	May 31, 2013/ 12:45 PM	72.5	87.6	45.9
Site ST2	May 31, 2013/ 1:00 PM	May 31, 2013/ 1:15 PM	50.0	61.3	40.7

Notes: dB = A-weighted decibels; CNEL = community noise equivalent level; L_{dn} = day-night noise level; L_{eq} = energy-equivalent noise level; L_{max} = maximum noise level; L_{min} = minimum noise level.
 Site numbers correspond to locations shown in Exhibit 3.8-1.
 Source: Monitoring performed by Ascent Environmental in 2013

Table 3.8-12 Summary of Long-Term Existing Ambient Noise Level Measurements

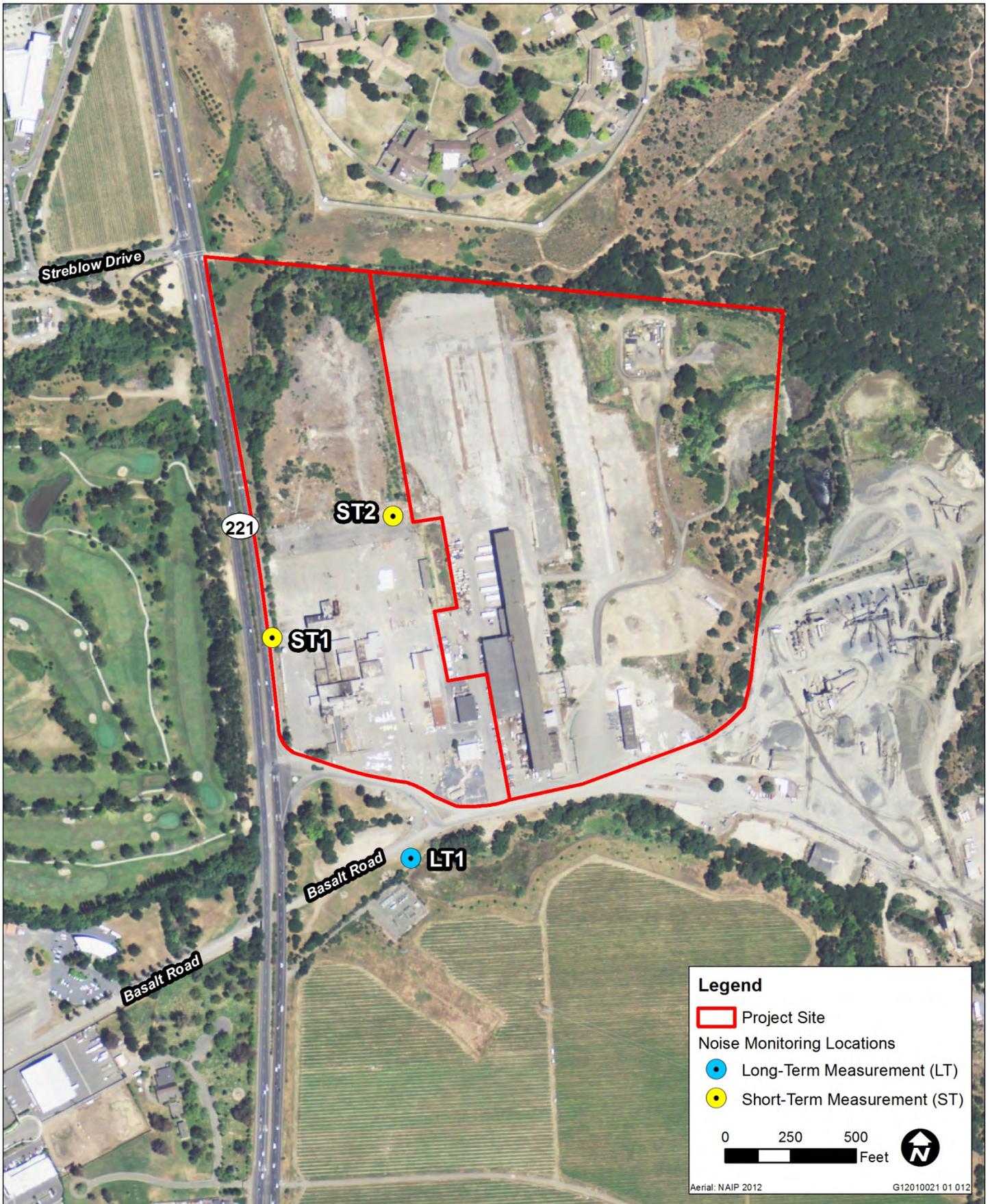
Location	Start (Date/Time)	Stop (Date/Time)	dB				
			CNEL/L _{dn}	Daytime		Nighttime	
				L _{max}	L _{min}	L _{max}	L _{min}
Site LT1	May 30, 2013/11:00 AM	May 31, 2013/ 11:00 AM	61.2	81.3	39.0	78.4	36

Notes: dB = A-weighted decibels; CNEL = community noise equivalent level; L_{dn} = day-night noise level; L_{eq} = energy-equivalent noise level; L_{max} = maximum noise level; L_{min} = minimum noise level.
 Site number corresponds to the location shown in Exhibit 3.8-1.
 Source: Monitoring performed by Ascent Environmental in 2013



Source: Created by Ascent Environmental in 2013

Exhibit 3.8-1 Summary of Existing Long-Term Ambient Noise Measurement



Source: Created by Ascent Environmental in 2013

Exhibit 3.8-2

Sound Level Noise Measurement Locations



3.8.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

METHODS AND ASSUMPTIONS

To assess potential short-term (construction-related) noise and vibration impacts, sensitive receptors and their relative exposure were identified. Project-generated construction source noise and vibration levels were determined based on methodologies, reference noise levels, and usage factors from FTA's Guide on Transit Noise and Vibration Impact Assessment methodology (FTA 2006). Reference levels are noise and vibration emissions for specific equipment or activity types that are well documented and the usage thereof common practice in the field of acoustics.

To assess potential long-term (operation-related) noise impacts due to project-generated increases in traffic, modeling was conducted for SR 221 consistent with the U.S. Department of Transportation Federal Highway Administration Traffic Noise Model (FHWA 2006) and project-specific traffic data provided by W-Trans. The analysis is based on the reference noise emission levels for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and ground attenuation factors. Vehicle volume on SR 221 was based on Caltrans records (Caltrans 2011a). Truck usage and vehicle speeds on study area roadways were based on Caltrans information (Caltrans 2011b). Please note that the modeling conducted does not account for any natural or human-made shielding (e.g., the presence of vegetation, berms, walls, or buildings) and, consequently, represents worst-case noise levels.

Noise and vibration associated with blasting was calculated based on accepted principles and methodologies from Caltrans Guidance Manual, Transportation and Construction Induced Vibration (Caltrans 2004), as well as site specific blasting parameters described below.

To assess potential noise impacts on the proposed project resulting from noise generated by operation of the adjacent quarry, reference noise levels were used to estimate overall noise level exposure at the proposed noise-sensitive land uses. Noise levels were compared to applicable County noise standards.

To evaluate relative significance, noise and vibration impacts were determined based on comparisons to applicable regulations and guidance provided by federal, state, and/or local agencies.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, a noise impact is considered significant if implementation of the proposed project would:

- ▲ result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- ▲ expose people residing or working in the project area to excessive noise levels;
- ▲ expose persons to or generate excessive ground vibration or noise levels;
- ▲ for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; or
- ▲ for a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

The following considerations apply to the first three significance thresholds identified above:

- ▲ Short-term construction-related noise levels that exceed applicable noise standards established by County of Napa during the day (7 a.m. to 7 p.m.) or during the more noise-sensitive early morning and nighttime periods (7 p.m. to 7 a.m.) (Napa County Municipal Code Section 8.16.070).
- ▲ Air blast levels that exceed the OSMRE recommended standard of 120 dB for both damage to windows and human annoyance.
- ▲ Blasting and mining operations induced ground vibration that exceeds the Caltrans recommended standard of 1.0 PPV with respect to the prevention of damage to new residential structures (Caltrans 2004).
- ▲ Ground induced vibration from general mining operations (excluding blasting) that exceed FTA's maximum acceptable vibration standard of 80 VdB with respect to human response for residential uses (e.g., annoyance, sleep disturbance) (FTA 2006:8-3) at nearby vibration-sensitive land uses.
- ▲ New stationary or area sources that would generate long-term operational noise levels that exceed County of Napa noise standards (i.e., exterior noise standards for a multiple residential of 3 or more units located in a suburban setting, 50 dB during the nighttime hours of 10 p.m. and 7 a.m. and 55 dB during the daytime hours of 7 a.m. and 10 p.m. or interior noise standards of 45 dB CNEL for sleeping areas of residential land uses).
- ▲ Long-term traffic noise levels that result in a perceptible increase in noise (i.e., 3 dB or more), or exceed County of Napa noise standards, as indicated above.

It should be noted that because land uses located across SR 221 within the City of Napa are not considered sensitive uses (e.g., have higher acceptable exterior noise standards than the sensitive receptors located in the unincorporated county [see Table 3.8-2]), and because they are located at a greater distance than the nearest sensitive land use within the unincorporated county and the freeway (which generally elevates ambient noise levels in the vicinity) intervenes between the project site and the city limit, the County's noise standards represent a more conservative threshold of significance than the City's noise standards. Therefore, the City's standards are applied only if noise generated by the project would exceed the more conservative county standards.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

The proposed project is not located within an airport land use plan or within two miles of a public use airport. The proposed project is located approximately 2 miles from the Napa County Airport (APC), and outside of the Airport Compatibility Zones (Napa County 2007:4.2-23). No impact would occur with regard to safety hazards in proximity to airports. This issue is not discussed further in the DEIR.

IMPACT ANALYSIS

Impact 3.8-1	<p>Short-term, Construction-Related Noise and Vibration Effects on Nearby Sensitive Land Uses. Project construction activities would involve the use of heavy construction equipment. The Napa State Hospital is the nearest land use sensitive to elevated noise levels. Noise modeling was conducted for the construction of both project site design options and the results indicate that construction-related noise and vibration would not exceed County noise standards. In addition, the County allows for elevated noise levels for construction, especially during daytime hours. The proposed construction activities would occur within the County's specified daytime hours of construction. The vibration associated with project construction would be hardly perceptible, if perceptible at all, and would not exceed Caltrans' or FTA's specified vibration threshold for structure damage and annoyance (respectively). Therefore, this impact is considered <i>less than significant</i>.</p>
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SHORT-TERM CONSTRUCTION NOISE LEVELS

Construction activities for both options would require similar noise-generating construction equipment. To assess noise levels associated with the various equipment types and operations, construction equipment can be considered to operate in two modes: mobile and stationary. Mobile equipment sources move around a construction site performing tasks in a recurring manner (e.g., graders, dozers, pavers), while stationary equipment operates in a given location for an extended period of time. Additionally when construction-related noise levels are being evaluated, activities that occur during the more noise-sensitive evening and nighttime hours are of increased concern since this is when people generally sleep and may be more easily disturbed.

Construction activities associated with both options would include demolition of existing buildings and site preparation (e.g., excavation, grading, and vegetation clearing), structure erection, and new parking areas. These activities may involve the use of heavy-duty construction equipment that would generate high noise levels.

Based on the site plans, implementation of either site option would place the acoustical center of the proposed construction activities approximately 1,200 feet from the boundary of the existing State Hospital and approximately 1,300 feet from the nearest State Hospital building. Noise levels from the proposed types of construction equipment are shown in Table 3.8-13.

Type of Equipment	Noise Level (L_{max}) at 50 feet
Grader	85
Scraper	85
Jackhammer	85
Dump Truck	84
Generator	82
Backhoe	80
Front End Loader	80

Source: Data compiled by Ascent Environmental in 2013

Based on the information provided in Table 3.8-13 and accounting for typical usage factors of individual pieces of equipment and activity types along with typical attenuation rates, on-site construction-related activities (for either site option) could result in hourly average noise levels of approximately 91 dB L_{max} at 50 feet. Accounting for typical attenuation rates, these noise levels could reach a maximum of 64 dB L_{max} at the State Hospital boundary (nearest existing sensitive receptor), and an average continuous noise level as high as 60 dB L_{eq} .

For construction activities, Section 8.16.080 or the Napa County Code identifies specific noise limits that are allowed in excess of the County's noise standards. The Code allows construction noise up to 75 dBA during the daytime (7 a.m. to 7 p.m.) and up to 65 dBA during the nighttime (7 p.m. to 7 a.m.) at residential properties, or, in this case, the State Hospital property. Therefore, because the maximum noise level at the State Hospital boundary would be 64 dB L_{max} (60 dB L_{eq}), proposed project-related construction activities would be within the County's acceptable construction noise standards for daytime and nighttime hours. In addition, as stated in Chapter 2, "Project Description," proposed noise-generating construction activities would occur between 7 a.m. and 7 p.m., Monday through Friday, but would likely end by 4 p.m., consistent with typical construction hours of operation. Therefore, short-term onsite construction source noise associated with implementation of the proposed project on either site option (366 beds or 526 beds) on either site (Boca or Pacific Coast parcels) would not result in the exposure of persons to or generation of noise levels in excess of applicable standards, or a

substantial temporary increase in ambient noise levels in the project vicinity above levels existing without the project.

GROUND VIBRATION

Construction activities generate varying degrees of temporary ground vibration, depending on the specific construction equipment used and activities involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increased distance. Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. Blasting activities also generate relatively high levels of ground vibration. The effects of ground vibration may be imperceptible at the lowest levels, result in low rumbling sounds and detectable vibrations at moderate levels, and can cause sleep disturbance or annoyance at high levels.

The proposed project would not include the development of any new major stationary sources of ground vibration. Construction of the project may result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and activities involved. (Project construction does not include blasting.) Ground vibration and noise levels associated with various types of construction equipment and activities are summarized in Table 3.8-14.

Equipment	PPV at 25 feet (in/sec) ¹	Approximate L _v (VdB) at 25 feet ²
Large Dozer	0.089	87
Loaded Trucks	0.076	86
Rock Breaker	0.059	83
Jackhammer	0.035	79
Small Dozer	0.003	58

PPV = peak particle velocity; L_v = the root mean square velocity expressed in vibration decibels (VdB), assuming a crest factor of 4
Source: FTA 2006:12-6,12-8

Based on FTA's recommended procedure for applying a propagation adjustment to these reference levels, predicted worst-case ground vibration levels would result in 37 VdB (0.0003 in/sec PPV) at the nearest sensitive receptor and would therefore not exceed FTA's maximum acceptable vibration standard of 80 VdB with respect to human annoyance and would also not exceed Caltrans's recommended level of 0.5 in/sec PPV with respect to the prevention of structural damage.

Project impacts associated with construction-related noise and ground vibration are **less than significant**.

Mitigation Measure

No mitigation is required.

Impact 3.8-2	Long-term Increase in Noise Levels from Operation of On-Site Stationary Noise Sources. The proposed project includes several stationary features that would generate noise during project operation; these include PA system, heating, ventilation, and air conditioning (HVAC) equipment, emergency back-up generators, among other less noisy features and activities. The results of noise modeling conducted for these individual stationary noise sources indicates that resulting noise levels experienced at the adjacent Napa State Hospital (nearest off-site sensitive receptor) would comply with the standards set forth in the Napa County General Plan and the Napa County Code. Therefore, the impact would be <i>less than significant</i> .
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The proposed project could introduce several on-site stationary noise sources associated with the support and operation of the facility. Stationary noise sources associated with facility operations could include rooftop HVAC equipment; mechanical equipment; and emergency electrical generators. Correctional facilities generally incorporate outdoor public address systems, multiple alarms, and outdoor recreation facilities for inmates. The noise levels associated with the operation of these sources are described separately below.

PUBLIC ADDRESS SYSTEM

The project would include the installation of a public address (PA) system on proposed facilities. The exact number and orientation of PA system components have not yet been determined. Based on noise measurements conducted at similar correctional facilities, noise levels for prison outdoor PA systems can reach intermittent levels up to approximately 90 dBA L_{max} at 50 feet (California Department of Corrections and Rehabilitation [CDCR] 2010:4.9-27). The operation of PA systems is generally intermittent by nature (i.e., less than approximately one minute in duration) and would typically only occur during daytime hours (when inmates are outside the buildings).

On-site receptors are not considered sensitive receptors for this noise source, as on-site receptors are considered users of PA system operations. The Napa State Hospital is considered the nearest off-site noise-sensitive land use located approximately 1,200 feet north of the acoustical center of the both project site options. Noise modeling results indicate that noise levels attributed to the PA system could reach 63 dBA L_{max} at the State Hospital. This would be less than the maximum noise-level standards established in the Napa County Municipal Code Noise Ordinance, which allows for 10 dB over the standard for noise generated over a cumulative period of no more than five minutes in any hour. Therefore, using the daytime standard of 55 dBA, the Noise Ordinance would allow 65 dB for a noise generated no more than a total of five minutes in a given hour. Because the PA system would not typically be used for more than five minutes in a given hour, the proposed PA system would comply with the County Code standard.

MECHANICAL HVAC EQUIPMENT

HVAC equipment could be a primary noise source associated with an institutional use. HVAC equipment would be mounted on rooftops or located within mechanical rooms. The noise sources could take the form of fans, pumps, air compressors, chillers, or cooling towers. Noise levels from HVAC equipment vary significantly depending on unit efficiency, size, and location, but produce noise reaching up to 90 dBA L_{eq} at a distance of 3 feet (U.S. Environmental Protection Agency 1971:57). Accounting for typical attenuation rates of 6 dBA per doubling of distance and shielding provided by on-site structures, noise levels attributed to HVAC mechanical systems, if located on the roofs, could generate 38 dBA L_{eq} at the Napa State Hospital (nearest sensitive receptor) and thus, would not be anticipated to exceed noise level criteria in the Napa County General Plan and Napa County Code.

During project operation, inmates utilizing outdoor spaces near the proposed buildings would not be substantially affected by the noise generated by roof-top HVAC systems (estimated to generate 66 dBA L_{eq} at a