

Draft

ZONE 7 PPWTP AMMONIA FACILITY REPLACEMENT PROJECT

Initial Study and Mitigated Negative Declaration

Prepared for:
Zone 7 Water Agency

October, 2006

NOTICE OF PUBLIC REVIEW AND INTENT TO ADOPT A PROPOSED MITIGATED NEGATIVE DECLARATION

Zone 7 Patterson Pass WTP Ammonia Facility Replacement Project

Pursuant to the State of California Public Resources Code and the "Guidelines for Implementation of the California Environmental Quality Act of 1970" as amended to date, this is to advise you that the Zone 7 Water Agency (Zone 7) has prepared an initial study/mitigated negative declaration (IS/MND) on the Zone 7 Patterson Pass Water Treatment Plant (WTP) Ammonia Facility Replacement Project.

As part of the disinfection process, Zone 7 uses chloramination to minimize formation of disinfection byproducts and chlorinous taste and odors, and to maintain a disinfectant residual in the distribution system. The proposed project includes the removal of the existing gaseous ammonia system at the Patterson Pass WTP and replacement with an aqua (or liquid) ammonia system (using a 19 percent ammonia solution). The existing gaseous ammonia delivery components are near the end of their service life and the proposed project is intended to replace the existing system in order to improve the reliability of plant operations and employee and public safety. New facilities proposed under the project include an aqua ammonia tank and storage building, a chemical fill station and underground containment structure, and two additional feed lines. The proposed project will not change the existing or planned treatment plant capacity. No substantive changes in operations are anticipated as part of the proposed project.

The IS/MND report describes the proposed project, analyzes whether the project would result in any potential significant environmental impacts, and describes measures that would mitigate any potential significant impacts to a less-than-significant level.

Public Comment Period - The period for accepting comments on the adequacy of the environmental documents extends to **5:00 P.M., November 27, 2006**. Any comments should be in writing and submitted to the following address:

Jack Fong
Zone 7 Water Agency
100 North Canyons Parkway
Livermore, CA 94551

The proposed IS/MND will be considered for adoption at the regularly scheduled Zone 7 Board of Directors meeting on **December 20, 2006 at 7 p.m.**

Draft

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SECTION 1

Project Description

1.1 Introduction

The Zone 7 Water Agency (Zone 7) supplies water to all of eastern Alameda County and a population of more than 190,000. Treated water is sold wholesale to local retailers, including the Cities of Livermore and Pleasanton, the Dublin San Ramon Services District, and the California Water Service Company. Zone 7 also distributes untreated water to local agriculture operations and golf courses. Zone 7 treats raw water supplied by the State Water Project through the South Bay Aqueduct (SBA) at its two water treatment plants in Livermore.

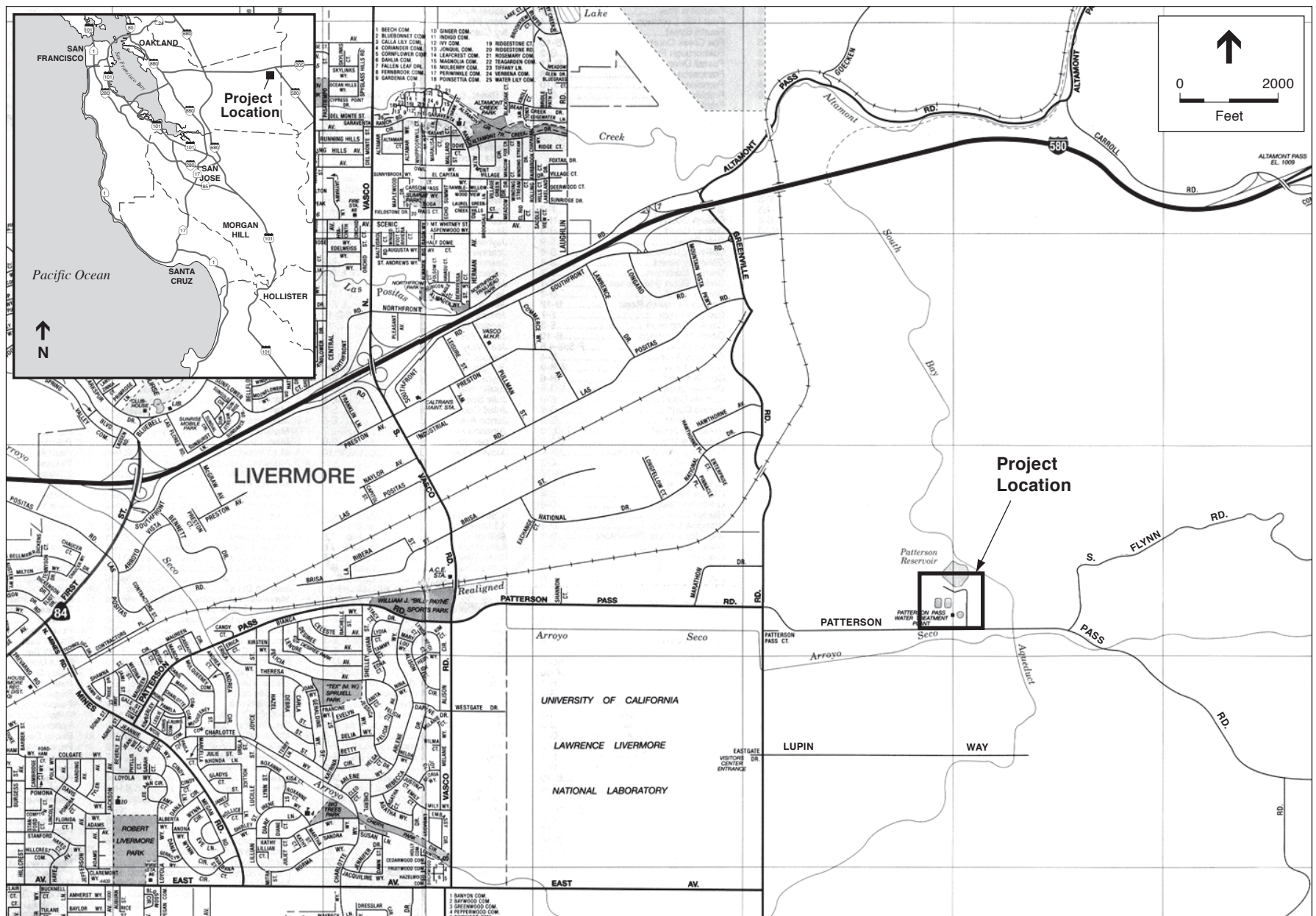
As part of the disinfection process, Zone 7 uses chloramination¹ to minimize formation of disinfection byproducts and chlorinous taste and odors, and to maintain a disinfectant residual in the distribution system. The existing Patterson Pass Water Treatment Plant (WTP) gaseous ammonia delivery components are near the end of their service life. The proposed project would remove the existing gaseous ammonia system and replace it with an aqua (or liquid) ammonia system (using a 19 percent ammonia solution) in order to improve the reliability of plant operations, safety of employees and public safety. New facilities proposed under the project include an aqua ammonia tank and storage building, a chemical fill station and underground containment structure, and two additional feed lines. The proposed project will not change the existing or planned treatment plant capacity. No substantive changes in operations are anticipated as part of the proposed project.

This Draft Initial Study and Mitigated Negative Declaration (IS/MND) has been prepared in order to examine the impacts associated with the proposed ammonia system replacement project (project). The Patterson Pass WTP is located in the eastern part of Livermore, California (**Figure 1-1**), in an unincorporated area of the eastern Alameda County; it currently has a total treatment capacity of 21.5 million gallons per day (mgd), deriving from a conventional treatment train (13.5 mgd) and an ultrafiltration (UF) treatment train (8 mgd). The plant has been designed to ultimately produce 25.5 mgd.

This IS/MND was prepared in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended), the State CEQA guidelines, and California Administrative Code, Title 14, Division, Chapter 3. This report is organized as follows: Section 1, Project Description, provides an introduction, background, needs and objectives, and discusses the proposed structures

¹ Chloramination consists of combining a commercial ammonia solution with sodium hypochlorite, also known as soda bleach or liquid bleach.

and facilities; Section 2, Environmental Evaluation, presents the CEQA Initial Study Environmental Checklist analyzing potential environmental impacts resulting from the project and describing the mitigation measures that would be incorporated into the project to avoid or reduce impacts to less-than-significant levels; Section 3, Summary of Mitigation Measures, presents a summary of mitigation measures which have been incorporated into the project; and Section 4 presents the report authors and references.



SOURCE: ESA; California State Automobile Association

Zone 7 Patterson Pass WTP Ammonia Facility Replacement Project . 205487

Figure 1-1
Project Location

1.2 Project Background

Zone 7 wholesales treated water to retail contractors for municipal and industrial (M&I) domestic use and supplies untreated water for irrigation to vintners, golf courses, and others in parts of the Livermore-Amador Valley. The Zone 7 service area is approximately 425 square miles (272,000 acres) and is located in eastern Alameda County. The service area includes the Cities of Pleasanton, Livermore and Dublin, as well as the surrounding unincorporated Alameda County lands. Retail contractors include the City of Pleasanton, the City of Livermore, the Dublin San Ramon Services District (DSRSD) and the California Water Services Company. In addition to using imported water supplies from the State Water Project to meet demands in the Livermore-Amador Valley, Zone 7 implements conjunctive use of groundwater. The Patterson Pass WTP derives all its supply water from the State Water Project by way of the South Bay Aqueduct (SBA).

1.3 CEQA Compliance

Zone 7 has prepared this IS/MND to provide the public, and Responsible and Trustee Agencies reviewing this project, with information about the potential effects, both beneficial and adverse, on the local and regional environment. This Mitigated Negative Declaration was prepared in compliance with Section 15070 of the CEQA Guidelines of 1970 (as amended), and California Administrative Code, Title 14, Division, Chapter 3. In accordance with Section 15070, a Mitigated Negative Declaration shall be prepared if the following criteria are met:

- There is no substantial evidence that the project may have a significant effect; or
- Where there may be a potentially significant effect, revisions to the project would avoid or mitigate the effects to a point where clearly no significant effects would occur.

In accordance with Section 15073 of the CEQA Guidelines, this document is being circulated to local, state and federal agencies and to interested organizations and individuals who may wish to review and comment on the report. Written comments may be forwarded to Jack Fong, Project Manager, Zone 7 Water Agency, 100 North Canyons Parkway, Livermore, California 94551. Supporting documentation is also available for review during regular business hours at the Zone 7 Water Agency office, at the above address.

1.4 Project Need and Objectives

As the principal treated water wholesaler in eastern Alameda County, Zone 7 has an ongoing commitment to optimize facility performance and improve chemical handling and safety measures at its water production facilities (Zone 7, 2006b). The existing Patterson Pass WTP gaseous ammonia delivery components are near the end of their service life, and the proposed project is intended to improve the reliability of plant operations, safety of Zone 7 employees and public safety. Though similar and significant health risks are present regardless of the ammonia

form, aqua ammonia is the safer alternative under certain accidental release scenarios examined by Oscar Larson & Associates (2006).

1.5 Existing and Proposed Facilities

Existing Facilities and Operations

The Patterson Pass WTP receives raw water from the State Water Project through the SBA. The SBA consists of open canal and pipeline reaches and services three major water agencies: Zone 7, the Alameda County Water District, and the Santa Clara Valley Water District. The Patterson Pass WTP is located on an approximately 15-acre parcel within a few hundred feet of the SBA open canal. Water flows by gravity from the canal to a 30 million gallon (mg) open reservoir (Patterson Reservoir) north of the treatment facilities (see **Figure 1-2**) before entering Patterson Pass WTP treatment facilities. The Patterson Pass WTP has two independent treatment process trains: a conventional plant and an UF membrane plant. The conventional plant includes the following general treatment processes: upflow clarification, dual-media filtration, disinfection, and chemical addition; the UF plant includes upflow clarification, membrane filtration, disinfection, and chemical addition.

The existing operations at the Patterson Pass WTP employ a variety of chemicals common to the water treatment process and are housed in a number of different facilities. Chemicals stored and used on-site include ferric chloride, sodium hypochloride alum, anhydrous ammonia, cationic polymer, anionic polymer, and caustic soda. The Patterson Pass WTP consists of several buildings and the treatment process structures, including two upflow clarifiers, conventional anthracite filters, a UF building which houses the membrane filters, sludge drying beds, a chemical storage island, a main control building, a conference building, and a two million gallon clearwell tank for storing treated water (see **Figure 1-2**). Treated water is gravity-fed from the clearwell to the transmission line.

As discussed above, the Patterson Pass WTP consists of two independent treatment trains. From Patterson Reservoir, water enters either the conventional or UF process trains by moving into their respective on-site clarifiers. The existing total treatment plant capacity (21.5 mgd) derives 13.5 mgd from the conventional treatment plant and an additional 8 mgd from the UF treatment plant. The conventional treatment train begins with chemical addition for the primary coagulant, followed by up-flow clarification and then dual-media filtration. The UF treatment train, on the other hand, consists of a series of porous membranes through which water is forced under pressure. After filtration, water from both treatment trains requires disinfection.

The Patterson Pass WTP uses chloramination, commonly used among water agencies, to minimize the formation of disinfection byproducts and chlorinous odors, and to maintain disinfection residual in the distribution system. As a general water treatment practice, and in response to California Department of Health Services (DHS) regulations requiring reduction of disinfection byproducts in the treatment process, Zone 7 switched from chlorination of water

supplies to chloramination in 1990. A chemical feed system introduces (or injects) the chemicals, independently, into each treatment train to produce potable water prior to distribution.

The existing gas ammonia system at the Patterson Pass WTP includes the following components (see **Figure 1-2** for locations):

- 625-gallon gas ammonia tank (located just south of the conventional train clarifier);
- Two ammoniators (which measure the ammonia gas fed to the conventional and the UF treatment trains) housed in a building adjacent to the ammonia gas tank;
- Chemical feed lines from the chemical feeders to the feed point for each treatment process train;
- The conventional feed point, located in a chemical feed vault between the Operations building and the conventional filters; and
- The UF feed point, located in the UF train chemical injection vault. A water softener for the UF train feed line reduces the potential for scaling in the feed line and injection point; it is housed in a room adjacent to the ammoniator room.



SOURCE: Zone 7; GlobeXplorer

Zone 7 Patterson Pass WTP Ammonia Facility Replacement Project. 205487

Figure 1-2
Existing and Proposed Facilities

Project Description

The proposed project includes the removal and replacement of the existing gas ammonia system with an aqua ammonia system (for the disinfection process) on the Patterson Pass WTP site (project site). The new aqua ammonia system would be designed to accommodate the ultimate treatment plant capacity of 25.5 mgd (maximum-day rate). Proposed facilities include a bulk storage tank for the aqua ammonia, a chemical fill station and catch basin, chemical metering pumps, and two new chemical feed lines to existing injection points and/or vaults. The existing 625-gallon gas ammonia tank and the two ammoniators would be permanently removed. The building which houses the existing ammoniators would be converted for future Operations purposes. Further, the feed lines running from the ammoniator room to the conventional and UF treatment trains would also be removed. Demolition of these gas ammonia system features would follow requirements set forth by the Alameda County Department of Environmental Health Agency (ACDEHA).

Ammonia Tank Storage Building and Chemical Fill Station

The proposed project includes the ammonia tank storage and chemical feed pump building and the adjacent chemical fill station. A new aqua ammonia storage tank (capacity would likely be between 6,500 gallons and 7,500 gallons) and chemical feed pumps will be housed in a pre-fabricated engineered metal building on the west side of the project site (see **Figure 1-2**). The storage tank would be constructed of either stainless steel or carbon steel with a liner (if necessary for added protection). The new storage tank building could be up to approximately 1,000 square feet (i.e., 30 feet by 35 feet in dimension) and have a maximum height of 14 feet. Further, the storage tank would be located within a concrete containment structure should the tank, or any of its appurtenances, fail or rupture; the containment structure would be sized to accommodate the entire tank volume of liquid ammonia. Zone 7 anticipates that the exterior appearance of the new storage tank building would closely match that of the existing Patterson Pass WTP Generator Building.

The chemical fill station would be a designated area for receiving and off-loading deliveries of aqua ammonia. A concrete catch basin would be constructed as part of the chemical fill station; the catch basin would drain into an underground concrete containment structure by means of drain sump (which could be capped after an emergency or when the fill station is not in use). The catch basin and containment structure would collect any inadvertent ammonia spill should the hose-line from the delivery truck or its storage tank rupture. The underground containment structure would be sized to accommodate the largest commercially available delivery truck volume plus 10 percent additional volume for rainwater. In terms of surface area, the chemical fill station may include up to a 200 square foot area for parking the chemical delivery truck during delivery. The fill station would be located just to the east of the proposed storage tank building to facilitate ease of delivery and take advantage of the existing chemical delivery truck flow pattern for the conventional treatment plant.

Additional safety features proposed for the new ammonia tank storage building include ambient ammonia gas detectors with audible and visual alarm annunciation and an emergency eyewash and shower unit located outside the building in close proximity to the chemical feed pumps.

Pumps and Feed Lines

Metering pumps and new feed lines would provide the means by which the aqua ammonia solution would enter the UF and conventional treatment processes. Up to four metering pumps would be housed within the new ammonia tank storage building. Piping for the two new feed lines (i.e., to each of the treatment trains) would be buried, double contained, and designed such that gravity flow in the event of a leak would be directed back towards the aqua ammonia facility. The new feed lines would likely connect to the treatment process trains at the existing chemical injection vaults for the conventional and UF treatment processes, respectively (see **Figure 1-2** for existing feed point locations).

Power, Instrumentation and Control Upgrades

An uninterruptible power supply (UPS) would be installed in the new aqua ammonia tank storage building and would automatically power the alarm system and controls when the normal electrical supply is interrupted. Minor electrical, instrumentation, and control system upgrades would occur during project implementation to integrate into the SCADA system.

Chemical Transfer and Handling

The proposed project involves changes to the frequency and volume of ammonia delivery and the way in which this process is handled. Zone 7 proposes bulk delivery of aqua ammonia to the Patterson Pass WTP via 3,000- to 6,000-gallon tanker trucks. The delivery trucks would dock at the proposed chemical fill station and the 19 percent aqua ammonia solution would be pumped from the chemical fill station directly into the proposed storage tank via a hose-line. On average, delivery of liquid ammonia would occur about five times per year.²

Construction

Addition of the building for the aqua ammonia storage tank, the chemical fill station, and the two new feed lines would require shallow excavation and construction of new facilities on the Patterson Pass WTP site. Excavation would primarily be related to the building footings, containment structures, the sump, pipe installation, and any access to existing underground structures (i.e., utilities or piping) that may be necessary. Total excavation volume would be approximately 700 cubic yards. All construction activities, including staging areas for equipment and excavation material, would be located within the property boundary of the Patterson Pass WTP. Excess excavation material would be hauled off-site for appropriate fill uses or to landfills in accordance with local, state, and federal regulations. Access to the project site would be from existing roadways, namely Greenville Road and Patterson Pass Road. Construction would

² Estimate based on an annual average plant production rate of 14 mgd and an average delivery volume of 3,000 gallons of 19 percent aqua ammonia solution.

generally occur between 7:00 a.m. and 7:00 p.m., Monday through Friday (no work would be performed on weekends or holidays).

The following equipment would be required for the proposed construction activities:

- Scraper
- Excavator
- Compactor
- Concrete truck
- Water truck
- Generator

Work crew makeup and construction vehicle/machinery operation would be typical of projects similar in size and scope to that proposed. The proposed project would require a daily work crew consisting of approximately six workers. Worker vehicle trips and truck trips associated with the export and import of soil and equipment would result from this project. Assuming that all soils are exported to an appropriate landfill, that the majority of excavation and equipment delivery occurs during the initial two-week construction period, and each truckload has a capacity of 10 cubic yards, approximately six to seven round-trips per day would occur, on average, during the initial two-week period. The number of truck trips is expected to decrease during subsequent phases of construction. Trips associated with worker vehicles would also occur as part of the proposed project. Worker vehicle parking would be accommodated within the property boundary of the Patterson Pass WTP. All areas affected by construction would be restored to their pre-project condition.

Standards of design and construction of the replacement ammonia system will meet the requirements for the following codes, regulations, and design standards:

- 2001 California Fire Code, Article 80
- 2001 California Building Code
- ASME Code for Unfired Pressure Vessels, Section VIII
- 1999 American National Standard Institute K61.1 Standards for Storage and Handling of Anhydrous Ammonia
- ANSI standards
- National Fire Protection
- other local requirements as applicable

1.6 Schedule

Construction of the proposed facilities is expected to begin in the summer of 2007 and last up to eight months. The Patterson Pass WTP aqueous ammonia system is expected to be in-service by the summer of 2008.

1.7 Permits, Approvals, and Plan Updates

Project plans will require approval of ACDEHA, as this agency has jurisdiction over projects involving hazardous materials within Alameda County, and the California Department of Health Services (DHS) will review the project during the process of issuing an amendment to an existing permit. No other regulatory permits or agreements are anticipated, as the proposed facilities would not be located within sensitive biological habitat.

Both aqueous and gaseous ammonia are regulated at the Federal and State level. Prior to approval and upon implementation of the proposed project, Zone 7 will continue to comply with the requirements of the following regulations as they relate to the storage and handling of liquid ammonia:

FEDERAL

- Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)
- Chemical Accident Prevention Program (40 CFR, Part 68), established in 1996 by the EPA
- Federal Clean Air Act General Duty Clause
- Federal OSHA regulations (29 CFR, 1910)

STATE (California)

- California Hazardous Materials Business Plan
- California Accidental Release Prevention Program (CalARP)
- California Fire Code
- California OES Release Reporting

As part of the proposed project, Zone 7 would update the Patterson Pass Water Treatment Plant Risk Management plan for ammonia to reflect changes related to the handling and storage of ammonia on-site per the California Accidental Release Prevention Plan (CalARP). This includes the Hazardous Material Business Plans (HMBP) and the Spill Prevention Control Plan (SPCP). Specifically, the HMBP includes information such as 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. The SPCP provides site-specific chemical inventory, spill prevention equipment inventory, discussions on preventative maintenance, spill prevention procedures, and spill

response / follow-up reporting. The updated HMBP and SPCP will be submitted to ACDEHA for review prior to operation.

SECTION 2

Environmental Evaluation

1. **Project Title:** Zone 7 Patterson Pass WTP Ammonia Facility Replacement Project
2. **Lead Agency Name and Address:** Zone 7 Water Agency
100 North Canyons Parkway
Livermore, CA 94551
3. **Contact Person and Phone Number:** Jack Fong, Project Manager
Zone 7 Water Agency
(925) 454-5035
4. **Project Location:** 8750 Patterson Pass Road
Livermore, CA 94550
5. **Project Sponsor's Name and Address:** Zone 7 Water Agency
100 North Canyons Parkway
Livermore, CA 94551
6. **General Plan Designation(s):** Water Management
7. **Zoning Designation(s):** Large Parcel Agricultural
8. **Description of Project:** As part of the disinfection process, Zone 7 uses chloramination to minimize formation of disinfection byproducts, chlorinous taste and odors, and to maintain a disinfectant residual in the distribution system. The proposed project includes the removal of the existing gaseous ammonia system and replacement with an aqua (or liquid) ammonia system (using a 19 percent ammonia solution). The existing Patterson Pass Water Treatment Plant (WTP) gaseous ammonia delivery components are near the end of their service life and the proposed project is intended to replace the existing gaseous ammonia system with an aqua (or liquid) ammonia system (using a 19 percent ammonia solution) in order to improve the reliability of plant operations, the safety of employees and public safety. New facilities proposed under the project include an aqua ammonia tank and storage building, a chemical fill station and underground containment structure, and two additional feed lines. The proposed project will not change the existing or planned treatment plant capacity. No substantive changes in operations are anticipated as part of the proposed project.
9. **Surrounding Land Uses and Setting:** The Patterson Pass WTP is located in a rural area of eastern Alameda County, approximately one-half mile east of the City of Livermore. The facility is bordered by the South Bay Aqueduct to the east and Patterson Road to the south. The 30 million gallon Paterson Reservoir is located on contiguous property owned by the

Department of Water Resources to the north of the treatment plant. This reservoir is part of the State Water Project's South Bay Aqueduct. Surrounding land uses to the north, south, and west include open space, range lands, and rural residential areas. The undeveloped Diablo Range hills to the east and north of the site separate the Livermore Valley watershed from the San Joaquin Valley to the east. Lawrence Livermore National Laboratories, a national defense laboratory, is located approximately one half mile east of the treatment plant site. Interstate 580, connecting the Livermore Valley with the San Joaquin Valley, traverses Altamont Pass approximately two miles north of the treatment plant.

10. Other public agencies whose approval and/or review is required:

- Alameda County Department of Environmental Health Agency
- California Department of Health Services

Environmental Factors Potentially Affected

The proposed project could potentially affect the environmental factor(s) checked below. However, implementation of mitigation measures would reduce potential project impacts to a less-than-significant level. The following pages present a more detailed checklist and discussion of each environmental factor.

- | | | |
|---|---|---|
| ☒ Aesthetics | ☐ Agriculture Resources | ☒ Air Quality |
| ☒ Biological Resources | ☒ Cultural Resources | ☒ Geology, Soils and Seismicity |
| ☒ Hazards and Hazardous Materials | ☒ Hydrology and Water Quality | ☐ Land Use and Land Use Planning |
| ☐ Mineral Resources | ☒ Noise | ☐ Population and Housing |
| ☐ Public Services | ☐ Recreation | ☒ Transportation and Traffic |
| ☐ Utilities and Service Systems | ☐ Mandatory Findings of Significance | |

DETERMINATION: (To be completed by Lead Agency)

On the basis of this initial study:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

Signature

Jack Fong

Printed Name

Jack Fong

Date

10/23/06

For

Zone 7 Water Agency

Environmental Checklist

Aesthetics

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
1. AESTHETICS—Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☒	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway corridor?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

Discussion

- a) The proposed project and all related structures would be located entirely within the boundaries of the existing Patterson Pass WTP. The treatment plant is located in a rural area of eastern Alameda County and is surrounded by low density rural residential land uses and designated open space. The Patterson Pass WTP is surrounded with scenic vistas, particularly to the east where the Diablo Range hills divide Alameda County from San Joaquin County. However, as the City of Livermore has grown, the rural nature of the valley has diminished. The Patterson Pass WTP is situated within the easterly viewsheds of Lawrence Livermore National Laboratory and the City of Livermore. Two existing water tanks are visible on the hill to the north of the project site. A row of power-generating windmills is visible on the ridgeline to the north, near Altamont Pass, and a large monopole power line traverses the hillside to the east.

The proposed project would install a small, single-story storage building within the existing Patterson Pass WTP fence-line; the structure could be up to approximately 1,000 square feet and would not alter the general character of the existing facility as a whole. The addition of the new building within the existing property would not significantly impact scenic vistas. However, **Measure AES-1** (provided below) includes the use of appropriate materials to reduce light and glare and would ensure that impacts would be less than significant.

- b) Interstate 580 (I-580) from the Alameda County line to Interstate 5 (I-5) is a designated California Scenic Highway. This portion of I-580 is northward and over the Altamont Pass, well out of site of the Patterson Pass WTP. The following scenic corridors are

designated by the Scenic Route Element of the *Alameda County General Plan* prepared in 1966:

- Interstate 580
- Vasco Road
- Patterson Road from Vasco Road to the San Joaquin County border
- Tesla Road from Vasco Road to the San Joaquin County border
- Greenville Road from I-580 to Tesla Road
- Cross Road from Patterson Road to Tesla Road

The Patterson Pass WTP is not visible from I-580 within the Livermore Valley due to road-side obstructions and topography. However, the property is situated on Patterson Pass Road, which carries a scenic corridor designation. The project site is also within the long-range view from Greenville Road. The proposed project would install a small, single-story storage building within the existing Patterson Pass WTP fence-line; the structure could be up to approximately 1,000 square feet and would not alter the general character of the existing facility as a whole. The proposed project would install a single-story, pre-engineered metal building within the existing Patterson Pass WTP site. Other proposed facilities would be underground (i.e., new chemical feed lines and a containment structure for the chemical fill station) and would also be located within the existing Patterson Pass WTP site. Building materials would be consistent with the existing visual character of the Patterson Pass WTP. Therefore, project implementation would not affect short or long range views from either of the designated roadways and the potential impact to scenic resources would be less than significant.

- c) The proposed project would not significantly damage the visual character of the area since all facilities would be constructed within the boundaries of an existing treatment plant. The size and architectural style of the new components would be consistent with the existing structures and would not degrade the existing visual character. Therefore, potential impacts upon the visual character of the site and its surroundings would be less than significant.
- d) The construction of a new tank storage building could create glare impacts both within the immediate vicinity and within the local viewshed. The new storage building could reflect evening sun light as seen from the City of Livermore. However, the new building would be painted an appropriate earthtone color so as to match the existing buildings, such as the metal building housing the plant standby generator and nearby chemical storage tanks, as specified in **Measure AES-1**, to minimize glare emanating from the Patterson Pass WTP. Therefore, potential impacts related to glare would be less than significant.

Mitigation Measures

Measure AES-1: Construction materials shall be selected so that they will minimize glare from the facilities. In addition, highly reflective building materials and/or finishes shall not be used in the designs for proposed structures.

Agricultural Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
2. AGRICULTURAL RESOURCES				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland of Statewide Importance to non-agricultural use?	☐	☐	☐	☒

Discussion

- a,b,c) The proposed project will be constructed entirely within the existing boundaries of the Patterson Pass WTP; therefore, no Farmland designations would be impacted by the project. The Patterson Pass WTP site is designated as “Urban and Built-up Land” on the 1998 *Alameda County Important Farmland* map prepared by the California Division of Land Resource Protection. No agricultural zoning or Williamson Act Contract lands would be impacted by the project.

Air Quality

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
3. AIR QUALITY				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Discussion

- a,b,c) The Federal Clean Air Act and the California Clean Air Act mandate the control and reduction of air pollutants in California. Under these Acts, the U.S. Environmental Protection Agency (EPA) and the California Air Resources Control Board (CARB) have established ambient air quality standards for criteria pollutants including carbon monoxide, ozone, sulfur dioxide, nitrogen oxides, and particulate matter less than 10 microns across (PM₁₀).

The proposed project is located within the Livermore Valley, a sub-region within the nine-county San Francisco Bay Area Air Basin. The entire Bay Area is designated as “non-attainment” for the state standards for ozone and particulate matter (PM₁₀). The basin is designated “other non-attainment” for the federal ozone standard and as a “maintenance” area relative to the national 8-hour average carbon monoxide standard. As a result of the “non-attainment” status, air quality plans have been adopted.

The proposed project would not conflict with or obstruct the implementation of the applicable air quality plans because no operational air emissions would occur and construction-phase emissions are accounted for in the Bay Area Air Quality Management District’s (BAAQMD) emission inventory; this inventory is the basis for regional air quality plans. Thus, construction-related emissions are not expected to impede attainment or maintenance of ozone or carbon monoxide standards in the Bay Area. Fugitive dust (including PM₁₀) and other criteria pollutants would be generated through excavation activities, construction equipment exhaust and construction-related vehicle trips. Pollutant emissions would be short-term and impacts would be reduced to a less-than-

significant level with the implementation of dust control measures (**Measure AQ-1**) in order to reduce fugitive dust generation.

Gaseous ammonia is currently used at the Patterson Pass WTP for water treatment. Replacement of the gas ammonia with aqua ammonia and the subsequent operation of the treatment system as described for the proposed project would not result in any additional air emissions. The project proposes a specially-designed aqua ammonia tank, storage building, and chemical fill station that would provide for containment of the chemical in the event of an accidental or catastrophic release. Off-gas modeling performed by Oscar Larson & Associates (2006) indicates that aqua ammonia is safer than gaseous ammonia under certain accidental release scenarios. Further, safety features of the proposed project include secondary containment for the aqua ammonia tank, a storage building equipped with ammonia gas monitoring equipment and a forced-air ventilation system to mitigate the potential release of a liquid or gaseous form to the environment, and a concrete catch basin and underground containment structure for the chemical fill station. Therefore, no additional ammonia-related air quality impacts would occur as a result of the proposed project.

- d) Sensitive receptors include health care facilities, retirement homes, residences, schools, playgrounds, child care centers, and athletic facilities. Residential areas and schools are considered to be sensitive to air pollutants where residents such as children and the elderly tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Sensitive receptors near the Patterson Pass WTP are limited to a few rural residences within a radius of approximately one-quarter mile. Since operation of the proposed project would not involve air pollutant emitting equipment, no impacts to sensitive receptors are anticipated

Project construction would result in a temporary increase in air pollutant emissions. The main sources would be particulate matter (including PM₁₀) from earthmoving operations, and other criteria air pollutants, primarily from excavation activities and operation of heavy equipment. Given the limited size of the proposed facilities (up to approximately 1,000 square feet), temporary nature of construction activities (approximately eight months), and implementation of dust control measures (**Measure AQ-1**), potential impacts would be reduced to less-than-significant levels.

- e) The project is limited to construction and operation of a replacement ammonia facility and appurtenances and would not generate objectionable odors. Therefore, impacts associated with odor generation are not anticipated.

Mitigation Measures

Measure AQ-1: Zone 7 or its contractors shall implement dust control measures to reduce fugitive dust generation during construction activities. At a minimum, the contractor(s) shall be required to implement the following measures:

- Water the construction site (with active excavation) including stockpiles (dirt, sand, etc.) at least twice daily. Stockpiles may be covered or non-toxic soil binders may be applied;
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard. Tailgates of trucks shall be sealed;
- Sweep Patterson Pass Road near the treatment plant daily with water sweepers during earthwork activities.
- Internal combustion engines shall be equipped with adequate mufflers.
- Excessive idling of vehicles shall be prohibited.

Biological Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
4. BIOLOGICAL RESOURCES— Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion

a,b,c) The Patterson Pass WTP is a denuded industrial facility that does not provide primary habitat for special status plant or wildlife species. The active project area can be characterized as bare dirt, gravel and asphalt and is subject to ongoing treatment plant ground disturbance and operational activities. The larger treatment plant boundary is bordered to the north by the South Bay Aqueduct (SBA) and on the three remaining sides by California annual grasslands. Habitat quality in the grasslands varies from relatively intact communities west and south of the WTP to disturbed grasslands to the east. The grasslands community in this area is dominated by a dense to sparse cover of annual grasses, including soft chess (*Bromus mollis*), ripgut grass (*Bromus diandrus*), foxtail brome (*Bromus rubens*), wild oats (*Avena barbata*), and foxtail barley (*Hordeum jubatum*). Also present are yellow star-thistle (*Centaurea solstitialis*) and limited inclusions of salt grass (*Distichlis spicata*) in low-lying areas.

On August 25, 2005, ESA conducted a reconnaissance-level biological survey of the project site and surrounding area to identify site biological constraints and confirm earlier survey findings. Drainage ditches occur on the western and northern fringes of the treatment plant boundary. These features are noteworthy because they support wetlands habitat subject to jurisdiction of the U.S. Army Corps of Engineers and California Department of Fish and Game (CDFG). The channels are located greater than 200 feet from the proposed project area. As such, the project would not impact jurisdictional wetlands or riparian habitat.

Appendix A lists special status plant and wildlife species that were considered in the present assessment and provides their federal and state listing status. Three special status species were identified with at least moderate potential to occur in the local project area. Of these, the California red-legged frog (*Rana aurora draytonii*) maintains a sizeable breeding population in the channel that parallels the western edge of the treatment plant (Pittman, pers. obs., 2002). This feature also provides potential breeding habitat for California tiger salamander (*Ambystoma californiense*) and aquatic habitat for western pond turtle (*Emmys* (= *Clemmys*) *marmorata*); though neither species has been observed from the local area.

California red-legged frog and California tiger salamander are federally listed threatened species. This designation affords these species protection under the federal Endangered Species Act (Act). Under the Section 7 of the Act, activities that impact these species or their habitat require a permit from the U.S. Fish and Wildlife Service (USFWS). The western pond turtle is a California Species of Special Concern and is afforded protection under CEQA and CDFG code.

The channel along the western edge of the treatment plant is fed by multiple sources. Prior to the year 2003, water was siphoned from the SBA, which is owned and operated by the California Department of Water Resources (DWR), and released into the channel as part of an informal mitigation program for the California red-legged frog. However,

this practice no longer occurs. Currently, the channel is supported by shallow groundwater and another channel (the drainage ditch on the northern side of the property) draining an area to the northeast of the Patterson Pass WTP. Aquatic habitat for California red-legged frog, California tiger salamander and western pond turtle is limited to the two drainage channels. The nearest aquatic habitat that would support these species is located greater than 200 feet from the project site.

The proposed facilities would be constructed within a barren central portion of the treatment plant property that is subject to earthmoving as well as ongoing maintenance and operations. As such, the project site does not provide primary upland habitat for California red-legged frog, California tiger salamander, or western pond turtle. The treatment plant site, including the area to the southwest of the proposed storage building is subject to ongoing solids handling operations, involving a backhoe and dump truck, and as such is unsuitable for these species. However, because migrating California red-legged frogs and pond turtles do not distinguish between treatment plant industrial facilities and grasslands habitat to the west and north, precautions should be taken during construction to avoid impacting animals that could turn up in the project area. **Measure BR-1**, provided below, would reduce the potential for impacts to special status species to a less than significant level.

There are no breeding bird constraints for the project, as the work area is denuded and does not support breeding bird habitat, and this area is suitably distant from the western channel to avoid any potential impacts.

Precautions include installing a temporary silt fence exclusion fence around the construction area and providing a worker education program.

- d) The proposed facilities would be located in the interior of the project site, in a location that would not interfere with the migration or movement of wildlife.
- e,f) The project would not conflict with any habitat conservation plan (HCP) or natural communities conservation plan (NCCP). Additionally, there are no adopted HCPs, NCCPs, or other approved conservation plans in the local project vicinity. The project is located in an intensive-use portion of the treatment plant. No previously undisturbed habitat would be impacted as part of the project. No impacts are anticipated.

Mitigation Measures

Measure BR-1: Zone 7 or its contractors shall implement measures to isolate the project area from migrating wildlife using silt fence prior to construction, and provide contractor instruction relative to the protection of listed wildlife species. At a minimum, the contractor(s) shall be required to implement the following measures:

- Prior to construction, the active project boundary will be surrounded by a minimum 3-foot tall silt exclusion fence that will be buried to a depth of 6-

inches. The purpose of the fence is to exclude special status wildlife species that could wander into the project site during construction. Fencing will completely enclose the project area and gaps at adjoining panels will be no greater than 1/2-inch;

- Project activities will observe the minimum footprint necessary to complete the project and any staging or turnaround areas will remain within the current operations and maintenance footprint. Staging areas, if necessary, will be located as far from the western drainage channel as technically possible to provide a buffer between known special status species habitat and project activities.
- No federal approvals for relocation of California red-legged frog would be requested from the USFWS under the proposed project and the project is not located within habitat for this species.
- If for any reason project activities are required near frog-sensitive areas, a qualified biologist would be present at all times during construction to ensure that activities do not intrude into sensitive habitats and to identify potential impacts beyond those cited in this document. If a California red-legged frog were identified in the project construction zone, work would cease in the immediate area and the U.S. Fish and Wildlife Service Sacramento Field Office would be contacted immediately.
- Before construction begins, a qualified biologist will inspect the exclusion fence to ensure its integrity, and shall conduct an education workshop for contractor employees that outlines California red-legged frog, California tiger salamander and western pond turtle biology, legislative protection, and construction restrictions to reduce potential impacts.
- Any open trenches located within 100 feet of California red-legged frog habitat would be covered or fully surrounded by silt fences at the end of each work day to prevent accidental entrapment of California red-legged frogs. Trenches would be inspected daily prior to construction to ensure that no animals are trapped and that fences are working properly.

Cultural Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
5. CULTURAL RESOURCES— Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Discussion

a,b,c) The Patterson Pass WTP was originally constructed in the early 1960s on agricultural land. None of the structures on the treatment plant site have historical significance at this time and, thus, the proposed project would not cause substantial adverse change to historical structures. Construction activities would occur entirely within the Patterson Pass WTP property boundary. A records search and field survey for cultural and archaeological resources at the Patterson Pass WTP was conducted in July of 2000 during an earlier project on the treatment plant site. The subsequent report of the survey found no evidence of cultural resources on the property (William Self and Associates, 2000).

Because proposed construction activities would be confined within the fence-line of the Patterson Pass WTP and within areas that have been previously graded and disturbed as part of earlier construction projects, it is unlikely that unknown paleontological or cultural resources would be encountered during excavation. However, in the event that cultural resources are encountered during construction activities, implementation of **Measures CR-1** and **CR-2**, which establish procedures to follow in the event of an accidental find, would reduce potential construction-related impacts to a less-than-significant level.

d) No known human remains are known to exist within the fence-line of the Patterson Pass WTP. However, **Measure CR-2** addresses the procedures that would be implemented in the event human remains are unearthed during construction, thereby minimizing the potential effect to a less-than-significant level.

Mitigation Measures

Measure CR-1: A qualified archaeologist, certified by the Registry of Professional Archeologists, shall be available if necessary, during all ground disturbing activities. If the contractor encounters cultural resources during construction, the contractor shall avoid any further disturbance of the materials and immediately discontinue earthwork within 100 feet of the find. The qualified archaeologist shall monitor and evaluate the significance of the find in accordance with accepted practices. Depending on the nature of the find, whether historical or archaeological, Zone 7 shall comply with Public Resources Code 21084.1 or 21083.2. Any identified archaeological resources shall be

recorded by the archaeologist on Form “D” Public Resources (DPR) 422 (archaeological sites) and/or DPR 523 (historic properties) or similar forms.

Measure CR-2: In accordance with CEQA Guidelines Section 15064.5, in the event that prehistoric human remains are encountered, ground-disturbing activities at that location shall cease immediately, and there shall be no further excavation or disturbance of the site or any nearby areas reasonably suspected to overlie adjacent human remains until the County coroner makes a determination. If the coroner determines that the remains are Native American, then the Native American Heritage Commission in Sacramento shall be contacted within 24 hours, along with the Most Likely Descendant(s) of the deceased Native American, and disposition of the remains shall be in accordance with all applicable laws and regulations.

Geology, Soils and Seismicity

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
6. GEOLOGY, SOILS, AND SEISMICITY— Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☒	☐	☐
ii) Strong seismic ground shaking?	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☒	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Discussion

- a) The Patterson Pass WTP is located at the eastern margin of the Livermore Valley, which lies within the Coast Ranges Geomorphic Province of Northern California. The project site is located in an area traditionally characterized by moderate to high seismic activity. According to mapping done by Dibblee (1980), along the eastern margin of the Livermore Valley and within the various drainages descending from the hills to the east, semi-consolidated sediments of the Livermore Gravels formation and unconsolidated deposits of predominantly Pleistocene age alluvium conceal the bedrock. Bedrock in the hills on the east side of Livermore Valley consists of Miocene (6-23 million years old) marine sandstone of the Neroly and Cierbo formation. Further to the east (approximately 1 mile), sandstone and shale of the Cretaceous Great Valley Sequence (65-135 million years old) comprise the bedrock. The project site and immediately surrounding area is underlain by bedrock of the Cierbo formation; this unit is described as gray, brown and white sandstone with minor conglomerate, brown tuff and carbonaceous brown shale according to Kleinfelder, Inc. (1999).

The Patterson Pass WTP is located just south of the designated Alquist-Priolo Earthquake Fault Zone (Hart and Bryant, 1997) for the Greenville-Marsh Creek fault. Detailed California Geological Survey (CGS) maps of the Greenville Fault Zone emphasize Holocene (i.e., about the last 11,000 years) activity and, thereby, define the Greenville Fault Zone as active. Recent local investigations by DWR (i.e., concerning Patterson Pass Reservoir) did not find an active fault trace within the treatment plant site or immediate vicinity. Rupture of the Marsh Creek segment, located north of I-580, occurred during the 1980 earthquake on this fault. According to the Association of Bay Area Governments (ABAG) (2003a), the maximum credible earthquake for the Greenville Fault would be of magnitude 6.9 and produce very violent shaking in the project vicinity. In fact, the project site could be subject to significant groundshaking intensities in the event of an earthquake centered on any of the potentially active faults in the region (i.e., Greenville-Marsh Creek fault, Hayward fault, and the San Andreas fault to the west). However, the project would consist of water treatment-related facilities that are non-habitable structures, thereby minimizing risks to people. To reduce the risk of damage from seismic groundshaking and associated secondary seismic impacts to a level of acceptable risk, and therefore to a less-than-significant impact under CEQA, proposed facilities would be designed and constructed in accordance with applicable sections and version of the California Building Code (CCR Title 24, Part 2) (see **Mitigation Measure GEO-1**). Compliance with these provisions would reduce potential seismic impacts on these facilities to a less-than-significant level.

Liquefaction, a secondary earthquake-induced hazard, occurs when water-saturated soils lose their strength and liquefy during intense and prolonged groundshaking. According to the *Liquefaction Susceptibility in the Bay Area Map*, published by ABAG (2003b), liquefaction susceptibility in the vicinity of the Patterson Pass WTP is low; therefore, potential impacts associated with liquefaction triggered by an earthquake event are considered to be less than significant.

- Landslides occur when the soil of a slope becomes saturated. The topography of the project site is flat and landslide susceptibility is considered low. Therefore, no impacts would occur.
- b) Construction activities such as excavation would expose soils to wind and water erosion forces. Implementation of **Measure WQ-1** (see Hydrology and Water Quality) and **Measure AQ-1** (see Air Quality) would reduce the potential for dust generation and runoff-related erosion, thereby reducing this impact to a less-than-significant level.
 - c,d) The United States Department of Agriculture (USDA) Soil Survey identifies native soil in the Patterson Pass WTP area as Rincon clay loam (USDA, 1966). This soil type is characterized as well drained, exhibiting slow to medium runoff, having slight to moderate erosion hazard, and occurring on nearly level to very gently sloping valley floors and alluvial fans. Rincon clay loam is considered to have a moderate to high shrink-swell potential and has a relatively slow permeability. Thus, there is a likelihood that expansive soils exist in the proposed location for the aqua ammonia tank storage building and the chemical fill station. Implementation of **Mitigation Measure GEO-1** would reduce the potential impacts associated with unstable and/or expansive to a less than significant level.
 - e) The proposed project does not include installation of a septic system; therefore, no impacts are anticipated.

Mitigation Measures

Measure GEO-1: Zone 7 will refer to any previous geotechnical studies completed concerning previous projects within the Patterson Pass WTP or, as necessary, conduct a geotechnical study of the project site to determine appropriate construction methods and foundation design. The study shall focus on seismic hazards and expansive soils. The project design will comply with the recommendations of the study, the latest version of the California Building Code (CCR Title 24, Part 2) and the American Water Works Association design guidelines for seismically active areas.

Hazards and Hazardous Materials

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
7. HAZARDS AND HAZARDOUS MATERIALS				
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
b) 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?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) 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?	☐	☐	☐	☒

Discussion

- a) Existing operations at the Patterson Pass WTP requires the transport, use, and disposal of hazardous material (i.e., gaseous ammonia and sodium hypochlorite). Gaseous ammonia is currently stored in a 625-gallon tank on-site; the project proposes storage of up to 5,400 gallons (i.e., a 6,000-gallon tank at 90 percent capacity) of a 19 percent aqua ammonia solution in a new, larger tank. As discussed above (Section 1, Project Description), the new tank would be enclosed within a storage building that would include a concrete containment structure. The existing gaseous ammonia tank is not enclosed. Further, the new storage tank building would include forced-air ventilation with negative pressure such that off-gas ammonia would not escape the building in the event of an accidental release. Additional safety features proposed for the new ammonia tank storage building include ambient ammonia gas detectors with audible and visual alarm annunciation, emergency eyewash and shower unit located outside the building in close proximity to the chemical feed pumps. The proposed project would increase the overall safety associated with the use of ammonia as it would provide additional measures to protect existing employees, the public, and the environment. In addition, Zone 7 has in place emergency response procedures that are included as part of their Hazardous Materials Business Plan (HMBP) (as required by CCR Title 6.95, Section 25500) and Spill Prevention Control Plan (SPCP) (as required by CFR, Title 40, Section 112.7). As

part of the project, Zone 7 would update the Hazardous Materials Management Plan (including the HMBP and the SCCP) and submit it to the appropriate agencies for review and to ensure that proper procedures are implemented in the event of an accidental spill or release.

Gaseous ammonia is currently delivered in bulk to the Patterson Pass WTP by designated chemical delivery tanker trucks. Under existing operations, gaseous ammonia is delivered to the treatment plant about 12 times¹ per year. Under the proposed project, a 19 percent aqua ammonia solution would be delivered to the site via 3,000- to 6,000-gallon tanker trucks. Based on a minimum truck delivery of 3,000 gallons and an average plant operating rate of 14 mgd, approximately five deliveries of aqua ammonia would be required each year, on average. Project implementation would reduce the number of delivery trips, thereby reducing the hazard potential to the public. Therefore, potential impacts concerning the transport, use, and disposal of hazardous materials are considered less than significant with no mitigation measures recommended.

Construction activities would require the use of certain potentially hazardous materials such as fuels, oils, and solvents. These materials would generally be used for excavation equipment, generators, and other construction equipment and would be contained within vessels engineered for safe storage. Spills during on-site fueling of equipment or an upset condition (e.g., puncture of a fuel tank through operator error) could result in a release of fuel or oils into the environment. Implementation of **Measures HM-1 through HM-3**, which requires incorporation of hazardous materials management, spill prevention, and spill response/cleanup measures in contractor specifications, would reduce impacts from hazardous materials release to a less than significant level.

- b) Under existing and project conditions, an upset (i.e., tank or hose rupture) or accident (i.e., chemical spill) could involve the release of hazardous materials into the environment, particularly with respect to gaseous or aqua ammonia. However, as discussed above (Section 1, Project Description), off-gas modeling performed by Oscar Larson & Associates (2006) for tank and hose rupture scenarios indicate that resultant ammonia concentrations near the property boundary would be less under the proposed project compared to the existing gaseous ammonia scenario. Therefore, potential impacts associated with upset and accidental releases of hazardous materials to the environment are considered less than significant.
- c) The Patterson Pass WTP is not located within one quarter mile of a school. Therefore, no impacts to schools from operations or construction activities would be anticipated.
- d) The Patterson Pass WTP is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, therefore, there is no impact.

¹ Based upon the number of deliveries to the Patterson Pass WTP in 2005.

- e,f) The proposed project would not interfere with airport operations and is not located within two miles of a public or private airport. The USGS quadrangle map (2002) shows a landing strip on the property immediately to the west of the Patterson Pass WTP. According to Zone 7 staff, this airstrip was used as a glider landing area in the past but has not been used for 10 years and has not been maintained (Environmental Science Associates [ESA], 2000). Therefore, no impacts would occur.
- g) The proposed facilities would be located within the property boundary of the existing treatment plant site and would not affect entrance or exits to adjacent uses. Within the property, an access route would be maintained such that sufficient space is available for vehicle movement and staging. Construction or routine operation of the proposed facilities would not interfere with emergency response plans or emergency evacuation plans.
- h) Construction or operation of the proposed project would not expose people to wildfire risks; nor would it increase the facility's susceptibility to wildfires. Therefore, no impacts would occur.

Mitigation Measures

Measure HM-1: Zone 7 shall require the contractor to prepare, approve, and submit a Health and Safety Plan (Plan) that includes a project-specific contingency plan for hazardous materials and waste operations before site activities could proceed. The Plan shall be applicable to all excavation activities and shall establish policies and procedures to protect workers and the public from potential hazards posed by hazardous wastes. The plan shall be prepared according to federal and California OSHA regulations for hazardous waste site health and safety plans.

The plan shall include, but not be limited to, the following:

- A discussion of hazardous materials management, including delineation of hazardous material and hazardous waste storage areas, access and egress routes, waterways, emergency assemble areas, temporary hazardous waste storage areas;
- Spill control and countermeasures, including employee spill prevention/response training; spill cleanup and dilution of spilled material; and
- Notification and documentation procedures.

Measure HM-2: Construction workers and Zone 7 personnel shall be appropriately trained in spill prevention, hazardous material control, and clean up of accidental spills.

Measure HM-3: The discharge of any hazardous or non hazardous waste as defined in the California Code of Regulations (CCR) Division 2, Subdivision 1, Chapter 2, shall be conducted in accordance with applicable state and federal regulations.

Hydrology and Water Quality

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
8. HYDROLOGY AND WATER QUALITY— Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) 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 (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river or, by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i) 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?	☐	☐	☐	☒
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion

- a) Few surface water features exist within and near the project site other than Patterson Pass Reservoir. The project site is generally flat, sloping slightly to the southwest toward Patterson Pass Road. As discussed above (Biological Resources), two drainage ditches (one on the north and one on the west) exist just inside the Patterson Pass WTP property boundary that support wetland habitats of poor-to-moderate quality. An ephemeral creek

flows southwestward toward the property from the Diablo Range hills and to a drainage ditch along Patterson Pass Road; the ditch acts as a flood control swale, collecting runoff from the hills and draining into Livermore Valley. Another creek, Arroyo Las Positas, enters the Livermore Valley from the east just south of Patterson Pass Road, traversing undeveloped pasture land south of the project site. The slope of the pasture land and the raised Patterson Road separate this water course from the treatment plant site and protect the site from flooding.

Because project construction would result in disturbance of less than one acre, a Storm Water Pollution Prevention Plan (SWPPP) is not required. However, construction activities could result in water quality impacts to the drainage ditch along the western fenceline of the treatment plant property. Water quality impacts could include entrainment of loose or disturbed soil by means of surface runoff and delivery to the drainage ditch. Implementation of appropriate standard erosion control techniques and Best Management Practices (BMPs), as specified in **Mitigation Measure WQ-1**, would reduce potential water quality impacts to a less than significant level.

- b) The proposed project would not increase demand for groundwater or interfere substantially with groundwater dynamics or recharge. Dewatering may (though it is not anticipated) be required during trench excavation for the feed line pipe installation. However, the project site lies on the eastern fringe of the Livermore Valley Groundwater Basin and groundwater levels are expected to be lower than the depth of trench excavation (approximately 3 to 4 feet). Any minor amount of dewatering that may be necessary would have a negligible effect on the groundwater table. Potential impacts to groundwater resources are considered less than significant.
- c,d,e,f) The proposed facilities would be located on previously graded (paved or gravel) or disturbed areas within the property boundary of the Patterson Pass WTP. The project area is generally flat and the proposed project would not involve any substantial changes to the on-site drainage pattern; the new ammonia tank storage building and chemical fill station would result in a small increase in impervious surface area (up to approximately 1,000 square feet combined and would be integrated into on-site drainage infrastructure. This increase in impervious surface is inconsequential with regards to a change in, or alteration of, on-site runoff, and this impact would be less than significant.

Further, the project would not impact an existing stormwater drainage system and would not provide additional sources of polluted runoff (other than discussed in a), above) or otherwise degrade water quality. Therefore, impacts would be less than significant.

- g,h,i) The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps provide flood zone designations for cities and unincorporated areas. The Patterson Pass WTP is not located within the 100-year floodplain as designated by the FEMA (1981) Flood Insurance Rate Map #0600010230A. Housing is not proposed as part of the project. Therefore, no impacts from flooding are anticipated.

- j) The project area is not subject to seiches, tsunamis, or mudflows and no impacts related to these phenomena are anticipated.

Mitigation Measures

Measure WQ-1: Zone 7 shall require contractors to implement appropriate BMPs for construction activities as specified by the California Storm Water Best Management Practices Handbook (Stormwater Quality Task Force, 1993) and/or the Manual of Standards for Erosion and Sediment Control Measures (ABAG, 1995). The BMPs include measures guiding the management and operation of construction sites to control and minimize the potential contribution of pollutants to storm runoff from these areas. Erosion and sedimentation control practices include installation of silt fencing, straw wattle, soils stabilization, revegetation, and runoff control (e.g., detention basins, straw bales, silt fences, check dams, geofabrics, drainage swales, and sand bag dikes) to limit increases in sediment entrained in stormwater runoff.

Land Use and Land Use Planning

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
9. LAND USE AND LAND USE PLANNING— Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion

- a,b) The proposed project would not physically divide a community or conflict with local land use plans or policies. The Patterson Pass WTP is currently used for treating potable water. The property is designated for Water Management in the *Alameda County General Plan* (1966) and the proposed project would not conflict with this General Plan designation. No conflicts with zoning or land uses are anticipated.
- c) The proposed project would not conflict with any habitat conservation plan (HCP) or natural communities conservation plan (NCCP); therefore, no impacts are anticipated.

Mineral Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
10. MINERAL RESOURCES—Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion

- a,b) The proposed project would not impact mineral resources. Clay, coal, and silica have been mined historically in the vicinity of Patterson Pass and other potentially economically valuable mineral deposits have been identified in the general region including manganese, chromium, clay, gemstones, pyrite, dimension stone, sand and gravel, and natural gas. An operating oil well exists adjacent to the project site to the west. However, no commercially exploitable mineral deposits are known to exist within the boundaries of the Patterson Pass WTP and the site is not within a mineral resource zone identified by the California State Geologist (California Division of Mines and Geology [CDMG], 1987). Further, the proposed project would not conflict with local general plans, specific plans, or land-use plans with regard to mineral resources and would not limit the availability of mineral resources. Therefore, construction and operation of the proposed facilities would not result in the loss of availability of known mineral resources that would be of value to the local, regional or state residents and no impacts to mineral resources would occur.

Noise

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
11. NOISE—Would the project:				
a) Result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Result in exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐

<i>Issues (and Supporting Information Sources):</i>		<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
c)	Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d)	Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e)	For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☒
f)	For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

- (a – d) The project site is located in a relatively unpopulated, rural area where noise sources are primarily from traffic on Patterson Pass Road and existing treatment plant operations. Some land uses are more sensitive to ambient noise levels than others due to the amount of noise exposure and types of activities typically involved. Noise sensitive land uses include residential, mobile home parks, motels and hotels, schools, libraries, churches, hospitals, nursing and convalescent homes, and some parks and cultural facilities. The nearest residences to the project site are approximately 1,200 feet southwest of Patterson Pass Road and the general area is sparsely populated; the nearest tract home residences are over one half mile to the west, just past Greenville Road.

The Noise Element of the *Alameda County, East County Area Plan* (1994) identifies noise compatibility guidelines for development in the unincorporated portions of Alameda County. The Noise Element indicates that noise levels up to 60 dBA, Ldn² are acceptable for noise-sensitive land uses.

Construction of the proposed facilities, which could last up to eight months, would temporarily increase noise levels in the project vicinity. Typical construction equipment (i.e., backhoe, dozer, and jackhammer) noise levels range from 79 to 88 dBA, Ldn at 50 feet from the noise source (EPA, 1971; Harris, 1991). Noise from construction activities generally attenuates at a rate of six to nine dBA for every doubling of distance and would fluctuate depending on construction phase, equipment type and duration of use, the distance between noise source and receptor, and the presence of barriers between the noise source and receptor. **Mitigation Measure NOI-1** (equipment noise control) would ensure that equipment noise is controlled to the degree feasible. Proposed facilities would

² Ldn is the average day and night noise level that accounts for the difference in response of people to both day and night time noise. Each nighttime noise event is multiplied by a factor of ten, which is approximately equal to a doubling in perceived loudness, to compensate for people's increased sensitivity during nighttime hours. The Ldn is used to evaluate the noise exposure in Pleasanton.

be enclosed and would be limited to chemical storage and electrical pumps; therefore, long-term noise generation is not anticipated. Given the limited proximity to residential uses, the limited extent and duration of proposed construction, and the natural attenuation of noise with distance, implementation of **Mitigation Measures NOI-1** and **NOI-2** would reduce potential noise impacts to less-than-significant levels.

- (e,f) The project site is not located within two miles of an active airport; therefore, the project would not expose people residing or working in the project area to excessive noise levels associated with airport operations.

Mitigation Measures

Measure NOI-1: In general, construction work shall be conducted Monday through Friday during daytime hours (7 a.m. to 7 p.m.). All onsite construction equipment with internal combustion engines shall be equipped with adequate mufflers.

Measure NOI-2: Zone 7 shall design and construct the proposed facilities such that operational noise does not exceed 60 Ldn at the nearest property line.

Population and Housing

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
12. POPULATION AND HOUSING— Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

- a) The proposed project provides an alternative form of ammonia for the existing treatment plant process and would not provide a new water supply nor increase the existing treatment plant capacity. As such, the proposed project would not affect the rate, location, or timing of growth within the Zone 7 service area and, therefore, no impacts related to population growth would occur.

- (b,c) In terms of infrastructure, the proposed project is limited to the construction of an ammonia tank storage building (and related appurtenances), a chemical fill station, metering pumps, and additional feed pipes. All new facilities and infrastructure would be built within the existing Patterson Pass WTP property boundary and, therefore, would not displace people or housing such that construction of replacement housing would be necessary. Thus, no impacts would occur.

Public Services

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
13. PUBLIC SERVICES— Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion

- a) Construction and operation of the proposed facilities would not necessitate the need for alteration of fire service facilities. In addition, the project would not alter or increase demands for fire services. Further, construction of the proposed facilities would not involve alteration of government facilities nor require new government facilities. The project would not alter or increase demands for public services or affect the performance standards of public services. Therefore, no physical or environmental impacts associated with the provision of new or altered governmental facilities would result.

Recreation

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
14. RECREATION—Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

- a,b) The proposed project does not propose recreational elements and it would not increase the use of existing parks or recreational facilities. Therefore, no impacts would occur.

Transportation and Traffic

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
15. TRANSPORTATION AND TRAFFIC—Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., conflict with policies promoting bus turnouts, bicycle racks, etc.)?	☐	☐	☐	☒

Discussion

- (a,b) The current contribution of Patterson Pass WTP activities to traffic in the region is minimal compared to roadway volumes on Greenville Road (ESA, 2000). The Lawrence Livermore National Laboratory (LLNL), located over 3,000 feet west of the project site, was accountable for 23,960 trips per day in 1992 (LLNL, 1992). Operation of the proposed project would require approximately 5 deliveries of aqua ammonia per year, on average; under existing operation, the Patterson Pass WTP receives approximately 12 deliveries per year of gaseous ammonia. Therefore, project operation would reduce traffic related to ammonia deliveries and not significantly effect traffic in the Livermore area.

Construction-related traffic is associated primarily with the transport of excavated soil, delivery of construction materials and equipment, and transportation of construction workers. As discussed above (Section 1, Project Description), approximately six to seven round-trips per day (associated with the export of soil and delivery of equipment) would be generated during the first few weeks of project construction. However, most equipment necessary for the project will be stored within the treatment plant property and trips related to equipment delivery will be considerably minimized after the first few weeks of project construction. Worker trips would also slightly increase the traffic volume on the local roadways (up to approximately 12 trips per day); however, worker vehicles are not expected to significantly reduce roadway capacities or level of service on the principal roadways in the project area. Further, the increase in worker trips would be temporary in nature, lasting only as long as project construction (i.e., approximately eight months). Due to the minimal number of additional truck trips (ammonia delivery and excavation off-hauling) and the temporary nature of construction-related traffic, potential impacts related to level of service and local traffic congestion are considered less than significant.

- c) The proposed project would not affect air traffic patterns; therefore, no impact would occur.
- (d,e) The project does not propose any design features that would result in an increased safety risk. To the contrary, many design features of the proposed project are aimed specifically at improving and assuring worker safety. Further, the proposed ammonia tank storage building and chemical fill station are located such that they do not impede internal site access or emergency access to the Patterson Pass WTP in general. Therefore, the proposed facilities would not create transportation hazards or obstructions to emergency access and these potential impacts are considered less than significant.
- f) Staging of equipment, material, and worker vehicles would be accommodated within the Patterson Pass WTP property. Therefore, no impacts to public parking availability or capacity are anticipated.
- g) The project would not conflict with adopted policies supporting alternative transportation and, therefore, no impact would occur.

Utilities and Service Systems

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
16. UTILITIES AND SERVICE SYSTEMS—Would the project:				
a) Conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Require new or expanded water supply resources or entitlements?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Discussion

- a) The Patterson Pass WTP is not connected to a municipal sanitary sewer system, rather it is equipped with an on-site septic system. The proposed project would not increase wastewater flows. Therefore, no impacts would occur.
- b) The proposed project is limited to construction of the ammonia tank storage building, chemical fill station, feed lines, and associated appurtenances. It would not necessitate the expansion or construction of new water or wastewater treatment facilities. Therefore, no impacts would occur.
- c) The proposed project is limited to construction of the ammonia tank storage building, chemical fill station, feed lines, and associated appurtenances. The sump drain, proposed as part of the chemical fill station, may periodically collect stormwater runoff. However, the area of the chemical fill station would be relatively small and this would not result in a significant contribution to runoff.
- d) The proposed project does not require water entitlements. Thus, no impact would occur.

- e) The Patterson Pass WTP is not connected to a municipal sanitary sewer system, rather it is equipped with an on-site septic system. Since the proposed project would not significantly increase full-time personnel on site, this system would not be impacted.
- (f,g) Solid waste generation would be limited to construction activities and would not affect available solid waste disposal capacity in the region. The contractor would be required to comply with all pertinent regulations regarding the disposal of solid waste generated by construction activities. No long-term solid waste generation would be associated with the proposed project. Therefore, impacts are considered less than significant.

Mandatory Findings of Significance

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
17. MANDATORY FINDINGS OF SIGNIFICANCE— Would the project:				
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Have impacts that would be individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion

- a) Without mitigation, the proposed project does have the potential to degrade the quality of the environment during construction activities. However, with the mitigation measures included as part of this Initial Study, all potentially significant impacts would be reduced to a less-than significant level.
- b) Potential impacts associated with the proposed project are primarily related to construction activities. Due to the limited extent and duration of the proposed activities, the proposed project would not contribute to cumulatively considerable impacts. Therefore, potential impacts are considered to be less than significant.

- c) Without mitigation, the proposed project does have the potential to adversely affect human beings, primarily through activities relate to project construction. However, these impacts would be temporary (lasting only for the duration of construction) and the mitigation measures included as part of this Initial Study would reduce these potential impacts to a less-than-significant level.
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SECTION 3

Mitigation Monitoring and Reporting Plan

3.1 Aesthetics

Measure AES-1: Construction materials shall be selected so that they will minimize glare from the facilities. In addition, highly reflective building materials and/or finishes shall not be used in the designs for proposed structures.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule
1. Zone 7 includes reflection/glare restrictions in construction specifications.	1. Zone 7 reviews construction specifications.	1. Zone 7	1. Prior to construction
2. Contractor builds facilities per construction specifications.	2. Sign-off by Zone 7 that measures are being implemented.	2. Zone 7	2. During construction

3.2 Air Quality

Measure AQ-1: Zone 7 or its contractors shall implement dust control measures to reduce fugitive dust generation during construction activities. At a minimum, the contractor(s) shall be required to implement the following measures:

- Water the construction site (with active excavation) including stockpiles (dirt, sand, etc.) at least twice daily. Stockpiles may be covered or non-toxic soil binders may be applied;
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard. Tailgates of trucks shall be sealed;
- Sweep Patterson Pass Road near the treatment plant daily with water sweepers during earthwork activities.
- Internal combustion engines shall be equipped with adequate mufflers.
- Excessive idling of vehicles shall be prohibited.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule
1. Zone 7 includes dust control measures in construction specifications.	1. Zone 7 reviews construction specifications.	1. Zone 7	1. Prior to construction
2. Contractor implements measures.	2. Sign-off by Zone 7 that measures are being implemented.	2. Zone 7	2. During construction

3.3 Biological Resources

Measure BR-1: Zone 7 or its contractors shall implement measures to isolate the project area from migrating wildlife using silt fence prior to construction, and provide contractor instruction relative to the protection of listed wildlife species. At a minimum, the contractor(s) shall be required to implement the following measures:

- Prior to construction, the active project boundary will be surrounded by a minimum 3-foot tall silt exclusion fence that will be buried to a depth of 6-inches. The purpose of the fence is to exclude special status wildlife species that could wander into the project site during construction. Fencing will completely enclose the project area and gaps at adjoining panels will be no greater than 1/2-inch;
- Project activities will observe the minimum footprint necessary to complete the project and any staging or turnaround areas will remain within the current operations and maintenance footprint. Staging areas, if necessary, will be located as far from the western drainage channel as technically possible to provide a buffer between known special status species habitat and project activities.
- No federal approvals for relocation of California red-legged frog would be requested from the USFWS under the proposed project and the project is not located within habitat for this species.
- If for any reason project activities are required near frog-sensitive areas, a qualified biologist would be present at all times during construction to ensure that activities do not intrude into sensitive habitats and to identify potential impacts beyond those cited in this document. If a California red-legged frog were identified in the project construction zone, work would cease in the immediate area and the U.S. Fish and Wildlife Service Sacramento Field Office would be contacted immediately.
- Before construction begins, a qualified biologist will inspect the exclusion fence to ensure its integrity, and shall conduct an education workshop for contractor employees that outlines California red-legged frog, California tiger salamander and western pond turtle biology, legislative protection, and construction restrictions to reduce potential impacts.
- Any open trenches located within 100 feet of California red-legged frog habitat would be covered or fully surrounded by silt fences at the end of each work day to prevent

accidental entrapment of California red-legged frogs. Trenches would be inspected daily prior to construction to ensure that no animals are trapped and that fences are working properly.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule
1. Zone 7 includes measures to isolate construction site from sensitive species in construction specifications.	1. Zone 7 reviews contractor specifications.	1. Zone 7	1. Prior to construction; during construction
2. Zone 7 provides contractor instruction.	2. Zone 7 provides on-site contractor instruction/education.	2. Zone 7	2. Prior to construction

3.4 Cultural Resources

Measure CR-1: A qualified archaeologist, certified by the Registry of Professional Archeologists, shall be available if necessary, during all ground disturbing activities. If the contractor encounters cultural resources during construction, the contractor shall avoid any further disturbance of the materials and immediately discontinue earthwork within 100 feet of the find. The qualified archaeologist shall monitor and evaluate the significance of the find in accordance with accepted practices. Depending on the nature of the find, whether historical or archaeological, Zone 7 shall comply with Public Resources Code 21084.1 or 21083.2. Any identified archaeological resources shall be recorded by the archaeologist on Form “D” Public Resources (DPR) 422 (archaeological sites) and/or DPR 523 (historic properties) or similar forms.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule
1. Zone 7 includes procedures associated with encountering of cultural resources in construction specifications including an onsite archaeologist if necessary , during all ground disturbing activities.	1. Zone 7 reviews construction specifications.	1. Zone 7	1. Prior to construction
2. In the event that cultural resources are found, construction shall stop and a qualified archaeologist shall be consulted.	2. Copies of DPR 422 or 523 shall be retained in the Zone 7 files.	2. Zone 7	2. During construction

Measure CR-2: In accordance with CEQA Guidelines Section 15064.5, in the event that prehistoric human remains are encountered, ground-disturbing activities at that location shall cease immediately, and there shall be no further excavation or disturbance of the site or any nearby areas reasonably suspected to overlie adjacent human remains until the County coroner

makes a determination. If the coroner determines that the remains are Native American, then the Native American Heritage Commission in Sacramento shall be contacted within 24 hours, along with the Most Likely Descendant(s) of the deceased Native American, and disposition of the remains shall be in accordance with all applicable laws and regulations.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule
1. Zone 7 shall include procedures associated with encountering pre-historic human remains in construction specifications.	1. Zone 7 reviews contractor specifications.	1. Zone 7	1. Prior to construction.
2. In the event prehistoric human remains are found, work shall stop and procedures identified above shall be followed.	2. Zone 7 retains agreement with Native Americans in Zone 7 files.	2. Zone 7	2. During construction; before construction recommences

3.5 Geology, Soils and Seismicity

Measure GEO-1: Zone 7 will refer to any previous geotechnical studies completed concerning previous projects within the Patterson Pass WTP or, as necessary, conduct a geotechnical study of the project site to determine appropriate construction methods and foundation design. The study shall focus on seismic hazards and expansive soils. The project design will comply with the recommendations of the study, the latest version of the Uniform Building Code and the American Water Works Association design guidelines for seismically active areas.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule
1. Zone 7 reviews prior geotechnical study and determines relevance.	1. Zone 7 incorporates study into construction specifications.	1. Zone 7	1. Prior to construction
2. Zone 7, if necessary , conducts a geotechnical study and includes recommendations in construction.	2. Zone 7 incorporates study into construction specifications.	2. Zone 7	2. Prior to construction
3. Contractor implements measures.	3. Sign-off by Zone 7 that measures are being implemented.	3. Zone 7	3. During construction

3.6 Hazards and Hazardous Materials

Measure HM-1: Zone 7 shall require the contractor to prepare, approve, and submit a Health and Safety Plan (Plan) that includes a project-specific contingency plan for hazardous materials and waste operations before site activities could proceed. The Plan shall be applicable to all excavation activities and shall establish policies and procedures to protect workers and the public

from potential hazards posed by hazardous wastes. The plan shall be prepared according to federal and California OSHA regulations for hazardous waste site health and safety plans.

The plan shall include, but not be limited to, the following:

- A discussion of hazardous materials management, including delineation of hazardous material and hazardous waste storage areas, access and egress routes, waterways, emergency assemble areas, temporary hazardous waste storage areas;
- Spill control and countermeasures, including employee spill prevention/response training; spill cleanup and dilution of spilled material; and
- Notification and documentation procedures.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule
1. Zone 7 prepares a Health and Safety Plan	1. Zone 7 incorporates plan in construction specifications.	1. Zone 7	1. Prior construction.
2. Zone 7 implements the plan	2. Zone 7 signs-off that measures have been implemented.	2. Zone 7	2. During construction

Measure HM-2: Construction workers and Zone 7 personnel shall be appropriately trained in spill prevention, hazardous material control, and clean up of accidental spills.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule
1. Zone 7 prepares a Health and Safety Plan	1. Zone 7 incorporates plan in construction specifications.	1. Zone 7	1. Prior construction.
2. Zone 7 implements the plan	2. Zone 7 signs-off that measures have been implemented.	2. Zone 7	2. During construction

Measure HM-3: The discharge of any hazardous or non hazardous waste as defined in the California Code of Regulations (CCR) Division 2, Subdivision 1, Chapter 2, shall be conducted in accordance with applicable state and federal regulations.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule
1. Zone 7 includes requirements in construction specifications.	1. Zone 7 reviews construction specifications.	1. Zone 7	1. Prior to construction
2. Contractor implements measures.	2. Sign-off by Zone 7 that measures are being implemented.	2. Zone 7	2. During construction

3.7 Hydrology and Water Quality

Measure WQ-1: Zone 7 shall require contractors to implement BMPs for construction activities as specified by the California Storm Water Best Management Practices Handbook (Stormwater Quality Task Force, 1993) and/or the Manual of Standards for Erosion and Sediment Control Measures (ABAG, 1995). The BMPs include measures guiding the management and operation of construction sites to control and minimize the potential contribution of pollutants to storm runoff from these areas. Erosion and sedimentation control practices include installation of silt fencing, straw wattle, soils stabilization, revegetation, and runoff control (e.g., detention basins, straw bales, silt fences, check dams, geofabrics, drainage swales, and sand bag dikes) to limit increases in sediment entrained in stormwater runoff.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule
1. Zone 7 shall incorporate appropriate BMPs in construction specifications.	1. Zone 7 reviews construction specifications.	1. Zone 7	1. Prior construction.
2. Contractor shall implement the BMPs.	2. Zone 7 signs-off that measures have been implemented.	2. Zone 7	2. During construction

3.8 Noise

Measure NOI-1: In general, construction work shall be conducted Monday through Friday during daytime hours (7 a.m. to 7 p.m.). All onsite construction equipment with internal combustion engines shall be equipped with adequate mufflers.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule
1. Zone 7 includes work hour limitations in construction specifications.	1. Zone 7 reviews construction specifications.	1. Zone 7	1. Prior to construction
2. Contractor implements measures.	2. Sign-off by Zone 7 that measures are being implemented.	2. Zone 7	2. During construction

Measure NOI-2: Zone 7 shall design and construct the proposed facilities such that operational noise does not exceed 60 Ldn at the nearest property line.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule
1. Zone 7 includes noise requirements in construction specifications.	1. Zone 7 reviews construction specifications.	1. Zone 7	1. Prior to construction
2. Contractor implements measures.	2. Sign-off by Zone 7 that measures are being implemented.	2. Zone 7	2. During construction

SECTION 4

Report Preparation

4.1 Lead Agency

Zone 7 Water Agency (Zone 7) is the lead agency under CEQA for the proposed project.

Staff Member	Role
Jack Fong, P.E.	Project Manager

4.2 Project Team

Zone 7 retained ESA to prepare this Initial Study/Mitigated Negative Declaration.

Staff Member	Role
Jim O'Toole	Project Manager / IS/MND
Justin Gragg	Deputy Project Manager / IS/MND
Brian Pittman, C.W.B.	Biological Resources / IS/MND

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APPENDIX A

Special Status Species Considered for the Proposed Project

APPENDIX A
LIST OF SPECIAL STATUS SPECIES CONSIDERED FOR THE PPWTP AMMONIA FACILITY
REPLACEMENT PROJECT

Common Name Scientific Name	Listing Status USFWS/ CDFG/CNPS	General Habitat Requirements	Potential for Species Occurrence within the Project Area
SPECIES LISTED OR PROPOSED FOR LISTING			
ANIMALS			
Invertebrates			
Longhorn fairy shrimp <i>Branchinecta longiantenna</i>	FE/--	Vernal pools or other areas capable of ponding water seasonally	Absent. Suitable pool habitat does not occur in the project area.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT/--	Vernal pools or other areas capable of ponding water seasonally	Absent. Suitable pool habitat does not occur in the project area.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE/--	Vernal pools or other areas capable of ponding water seasonally	Absent. Suitable pool habitat does not occur in the project area.
Callippe silverspot butterfly <i>Speyeria callippe callippe</i>	FE/--	Coastal areas in dunes, prairie, scrub, and grassland supporting johnny jump-ups	Absent. Suitable habitat does not occur in project area.
Reptiles			
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	FT/CT	Coast ranges in chaparral and riparian habitats	Absent. Suitable habitat does not occur in project area.
Amphibians			
California tiger salamander <i>Ambystoma californiense</i>	FT/CSC	Wintering sites occur in grasslands occupied by burrowing mammals; breed in ponds and vernal pools	Potentially Present Off-site. Potential aquatic breeding habitat occurs in a drainage channel located 200 feet west of the project area. Suitable upland habitat does not occur on the WTP or active project site.
California red-legged frog <i>Rana aurora draytonii</i>	FT/CSC	Breed in stock ponds, pools, and slow-moving streams	Present Off-site. A red-legged frog population resides in a drainage channel located greater than 200 feet west of the project area, on WTP property (Pittman, pers. obs.). No upland or aquatic habitat occurs in the project area.
Birds			
Little willow flycatcher <i>Empidonax traillii brewsteri</i>	FSC/CE	Nests and forages in dense riparian cover	Absent. Suitable habitat does not occur in project area.
American peregrine falcon <i>Falco peregrinus anatum</i>	FE/CE	Forages in marshes and grasslands. Nesting habitat includes high, protected cliffs and ledges near water	Absent. Suitable habitat does not occur in project area.
Bald eagle <i>Haliaeetus leucocephalus</i>	FT/CE	Winter foraging at lakes and along major rivers	Absent. Suitable habitat does not occur in project area.

APPENDIX A (CONTINUED)
LIST OF SPECIAL STATUS SPECIES CONSIDERED FOR THE PPWTP AMMONIA FACILITY
REPLACEMENT PROJECT

Common Name Scientific Name	Listing Status USFWS/ CDFG/CNPS	General Habitat Requirements	Potential for Species Occurrence within the Project Area
SPECIES LISTED OR PROPOSED FOR LISTING			
Mammals			
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	FE/CT	Annual grasslands or grassy open areas with shrubs, loose-textured soils for burrows and prey base	Absent. Suitable habitat does not occur in project area.
PLANTS			
Large-flowered fiddleneck <i>Amsinkia grandiflora</i>	FE/CE/1B	Lower portions of steep, protected north- and east-facing slopes in oak woodlands and grasslands	Absent. Suitable habitat does not occur in project area.
Palmate-bracted bird's-beak <i>Cordylanthus palmatus</i>	FE/CE/1B	Chenopod scrub and alkaline grasslands	Absent. Suitable habitat does not occur in project area.
Santa Cruz tarweed <i>Holocarpha macradenia</i>	FPT/CE/1B	Coastal prairies and grasslands on clay soils	Absent. Suitable habitat does not occur in project area.
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE/--/1B	Vernal pools	Absent. Suitable habitat does not occur in project area.
Showy Indian clover <i>Trifolium amoenum</i>	FPE/--/1B	Grasslands, sometimes serpentine soils	Absent. Suitable habitat does not occur in project area.
FEDERAL OR STATE SPECIES OF SPECIAL CONCERN			
ANIMALS			
Invertebrates			
Opler's longhorn moth <i>Adela oplerella</i>	FSC/--	Serpentine grasslands, main food plant are cream cups (<i>Platystemon californicus</i>)	Absent. Suitable habitat does not occur in project area.
Monarch butterfly <i>Danaus plexippus</i>	--/* (wintering sites)	Protected tree groves of eucalyptus, Monterey pine, and cypress with nearby nectar and water sources	Absent. Suitable habitat does not occur in project area.
Bridges' Coast Range shoulderband snail <i>Helminthoglypta nickliniana</i>	FSC/--	Open hillsides of Alameda and Contra Costa Counties- found in tall grass and weeds, and/or rock piles	Absent. Suitable habitat does not occur in project area.
Ricksecker's water scavenger beetle <i>Hydrochara rickseckeri</i>	FSC/--	Ponds and other aquatic habitats; standing water in ponds or ephemeral pools	Absent. Suitable habitat does not occur in project area.

APPENDIX A (CONTINUED)
LIST OF SPECIAL STATUS SPECIES CONSIDERED FOR THE PPWTP AMMONIA FACILITY
REPLACEMENT PROJECT

Common Name Scientific Name	Listing Status USFWS/ CDFG/CNPS	General Habitat Requirements	Potential for Species Occurrence within the Project Area
FEDERAL OR STATE SPECIES OF SPECIAL CONCERN			
Invertebrates (CONT)			
Curve-footed hygroty diving beetle <i>Hygroty curvipies</i>	FSC/--	Drainages, seeps, and wet areas; standing water in ponds or ephemeral pools	Absent. Suitable habitat does not occur in project area.
Reptiles			
Northwestern pond turtle <i>Clemmys marmorata marmorata</i>	FSC/CSC	Lakes, ponds, reservoirs, and slow-moving streams and rivers, primarily in foothills and lowlands	Potentially Present Off-site. Potential aquatic habitat occurs in a drainage channel located 200 feet west of the project area. Upland habitat does not occur on the active project site.
Amphibians			
Western spadefoot toad <i>Spea (=Scaphiopus) hammondi</i>	FSC/CSC	Freshwater seasonal marsh (primarily vernal pools for breeding), grassland, and oak savanna	Absent. Suitable habitat does not occur in project area.
Foothill yellow-legged frog <i>Rana boylli</i>	FSC/--	Shallow, flowing water, preferably with cobbles	Absent. Suitable habitat does not occur in project area.
Birds			
Cooper's hawk <i>Accipiter cooperii</i>	--/CSC (nesting)	Nests in dense oak and riparian woodland	Absent. Suitable habitat does not occur in project area.
Sharp-shinned hawk <i>Accipiter striatus</i>	--/CSC (nesting)	Nests in dense stands of conifers and riparian habitats	Absent. Suitable habitat does not occur in project area.
Tricolored blackbird <i>Agelaius tricolor</i>	FSC/CSC	Nests in freshwater marshes with dense stands of cattails or bulrushes, occasionally in willows, thistles, mustard, blackberry brambles, and dense shrubs and grains	Low Potential. Cattails located in the channel 200 feet west of the project site provide potential breeding habitat; however, this species is known to locally prefer more isolated breeding sites (Pittman, pers. obs).
Bell's sage sparrow <i>Amphispiza belli belli</i>	FSC/CSC	Nests and forages in chaparral in the inner Coast Ranges	Absent. Suitable habitat does not occur in project area.
Golden eagle <i>Aquila chrysaetos</i>	--/CSC	Nests in canyons and large trees in open habitats	Absent. Suitable habitat does not occur in project area.
Great blue heron <i>Ardea herodias</i>	--/* (nesting)	Colonial nester in tall trees near wetland foraging areas	Absent. Suitable habitat does not occur in project area.

APPENDIX A (CONTINUED)
LIST OF SPECIAL STATUS SPECIES CONSIDERED FOR THE PPWTP AMMONIA FACILITY
REPLACEMENT PROJECT

Common Name Scientific Name	Listing Status USFWS/ CDFG/CNPS	General Habitat Requirements	Potential for Species Occurrence within the Project Area
FEDERAL OR STATE SPECIES OF SPECIAL CONCERN			
Birds (CONT)			
Northern harrier <i>Circus cyaneus</i>	--/CSC	Nests in coastal freshwater and saltwater marshes, nest and forages in grasslands	Absent. Suitable habitat does not occur in project area.
Black-shouldered kite <i>Elanus leucurus</i>	--/*	Nests in shrubs and trees adjacent to grasslands, forages over grasslands and agricultural lands	Absent. Suitable habitat does not occur in project area.
California horned lark <i>Eremophila alpestris actia</i>	--/CSC	Nests and forages in short-grass prairie, mountain meadow, coastal plain, fallow fields, and alkali flats	Absent. Suitable habitat does not occur in project area.
Loggerhead shrike <i>Lanius ludovicianus</i>	FSC/CSC	Scrub, open woodlands, and grasslands	Absent. Suitable habitat does not occur in project area.
Burrowing owl <i>Athene cunicularia</i>	FSC/CSC	Nests and forages in low-growing grasslands that support burrowing mammals	Absent. Suitable habitat does not occur in project area.
Mammals			
Berkeley kangaroo rat <i>Dipodomys heermanni berkeleyensis</i>	FSC/*	Foothill grassland, oak/pine woodlands, and open chaparral	Absent. Suitable habitat does not occur in project area.
Greater western mastiff bat <i>Eumops perotis californicus</i>	FSC/CSC	Breeds in rugged, rocky canyons and forages in a variety of habitats	Absent. Suitable habitat does not occur in project area.
Small-footed myotis bat <i>Myotis ciliolabrum</i>	FSC/--	Forages over grasslands and roosts in caves and rock crevices	Absent. Suitable habitat does not occur in project area.
Long-eared myotis bat <i>Myotis evotis</i>	FSC/--	Inhabits woodlands and forests	Absent. Suitable habitat does not occur in project area.
Fringed myotis bat <i>Myotis thysanodes</i>	FSC/--	Inhabits a variety of habitats including pinyon-juniper woodland, valley-foothill hardwood, and hardwood-conifer forests	Absent. Suitable habitat does not occur in project area.
Long-legged myotis bat <i>Myotis volans</i>	FSC/--	Inhabits forests and woodland habitats, primarily oak and juniper woodlands	Absent. Suitable habitat does not occur in project area.
Yuma myotis bat <i>Myotis yumanensis</i>	FSC/--	Open forests and woodlands below 8,000 feet in close association with water bodies	Absent. Suitable habitat does not occur in project area.
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	FSC/CSC	Forests with moderate canopy cover and brushy understory	Absent. Suitable habitat does not occur in project area.

APPENDIX A (CONTINUED)
LIST OF SPECIAL STATUS SPECIES CONSIDERED FOR THE PPWTP AMMONIA FACILITY
REPLACEMENT PROJECT

Common Name Scientific Name	Listing Status USFWS/ CDFG/CNPS	General Habitat Requirements	Potential for Species Occurrence within the Project Area
FEDERAL OR STATE SPECIES OF SPECIAL CONCERN			
Mammals (CONT)			
Pacific western big-eared bat <i>Plecotus townsendii townsendii</i>	FSC/CSC	Inhabits oak and conifer woodlands, broad-leaved forests, arid grasslands, deserts, and high mountain meadows	Absent. Suitable habitat does not occur in project area.
PLANTS			
Alkali milk vetch <i>Astragalus tener</i> var. <i>tener</i>	FSC/--/1B	Playas, grasslands on adobe clay soils, alkaline vernal pools	Absent. Suitable habitat does not occur in project area.
Heartscale <i>Atriplex cordulata</i>	FSC/--/1B	Chenopod scrub and sandy, alkaline grasslands	Absent. Suitable habitat does not occur in project area.
Brittlescale <i>Atriplex depressa</i>	FSC/--/1B	Alkaline or clay grasslands, chenopod scrub, and playas	Absent. Suitable habitat does not occur in project area.
Valley spearscale <i>Atriplex joaquiniana</i>	FSC/--/1B	Alkaline scrub, meadows, and grasslands	Absent. Suitable habitat does not occur in project area.
Big-scale balsamroot <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	--/--/1B	Woodland and grassland, sometimes on serpentine soils	Absent. Suitable habitat does not occur in project area.
Big tarplant <i>Blepharizonia plumosa</i> ssp. <i>plumosa</i>	-/-/List 1B	Valley and foothill grasslands	Absent. Suitable habitat does not occur in project area.
Recurved larkspur <i>Delphinium recurvatum</i>	FSC/--/1B	Grasslands, woodlands, scrub, vernal pools with alkaline soils	Absent. Suitable habitat does not occur in project area.
Diamond-petaled poppy <i>Eschscholzia rhombipetala</i>	FSC/--/1A	Grasslands with clay soils	Absent. Suitable habitat does not occur in project area.
Talus fritillary <i>Fritillaria falcata</i>	FSC/--/1B	Chaparral, woodland, and coniferous forest on talus and often on serpentine soils	Absent. Suitable habitat does not occur in project area.
Fragrant fritillary <i>Fritillaria liliacea</i>	FSC/--/1B	Coastal prairie and scrub, grasslands, often on serpentine soils	Absent. Suitable habitat does not occur in project area.
Diablo helianthella <i>Helianthella castanea</i>	FSC/--/1B	Oak and riparian woodland, chaparral, grassland, and coastal scrub	Absent. Suitable habitat does not occur in project area.
Pappose spikeweed (Congdon's tarplant) <i>Hemizonia parryi</i> ssp. <i>congdonii</i>	FSC/--/1B	Grasslands with alkaline soils	Absent. Suitable habitat does not occur in project area.
Little mouseltail <i>Myosurus minimus</i> ssp. <i>apus</i>	FSC/--/3	Alkaline vernal pools and seasonally ponded areas	Absent. Suitable habitat does not occur in project area.
Hairless popcorn-flower <i>Plagiobothrys glaber</i>	--/--/1A	Alkaline wetlands in valleys, salt marshes	Absent. Suitable habitat does not occur in project area.

APPENDIX A (CONTINUED)
**LIST OF SPECIAL STATUS SPECIES CONSIDERED FOR THE PPWTP AMMONIA FACILITY
REPLACEMENT PROJECT**

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFG/CNPS	General Habitat Requirements	Potential for Species Occurrence within the Project Area
FEDERAL OR STATE SPECIES OF SPECIAL CONCERN			
PLANTS (CONT)			
Most beautiful (uncommon) jewelflower <i>Streptanthus albidus</i> ssp. <i>peramoenus</i>	FSC/--/1B	Chaparral and grasslands on serpentine soils	Absent. Suitable habitat does not occur in project area.
Caper-fruited tropidocarpum <i>Tropidocarpum capparideum</i>	FSC/--/1A	Grasslands in alkaline hills	Absent. Suitable habitat does not occur in project area.

STATUS CODES:

FEDERAL: (U.S. Fish and Wildlife Service)

FE = Listed as Endangered (in danger of extinction) by the Federal Government.

FT = Listed as Threatened (likely to become Endangered within the foreseeable future) by the Federal Government.

FP = Proposed for Listing as Endangered or Threatened.

FC = Candidate to become a *proposed* species.

FSC = Former Federal Species of Concern. The species may become Endangered or Threatened at a future time, but not enough biological information has been gathered, or the species is too common to support formal listing

STATE: (California Department of Fish and Game)

CE = Listed as Endangered by the State of California

CT = Listed as Threatened by the State of California

CR = Listed as Rare by the State of California (plants only)

CSC = California Species of Special Concern

* = Special Animals

3503.5=Protection for nesting species of Falconiformes (hawks) and Strigiformes (owls)

California Native Plant Society

List 1A=Plants presumed extinct in California

List 1B=Plants rare, Threatened, or Endangered in California and elsewhere

List 2= Plants rare, Threatened, or Endangered in California but more common elsewhere

List 3= Plants about which more information is needed

List 4= Plants of limited distribution

SOURCES: ESA; CNDDDB 2006