Oak Hill Municipal Well Project

Initial Study/Mitigated Negative Declaration

City of Petaluma

25 April 2022

Initial Study/Mitigated Negative Declaration
Oak Hill Municipal Well Project

This document has been prepared by:

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April 25, 2022

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1. Project Information

Project Title	City of Petaluma Oak Hill Municipal Well Project
Lead Agency Name & Address	City of Petaluma, 202 N. McDowell Boulevard, Petaluma, CA 94954
Contact Person & Phone Number	Dan Herrera, Senior Civil Engineer 707-778-4589 / DHerrera@cityofpetaluma.org
Project Location	35 Park Avenue, Petaluma, CA 94952 Sonoma County, California
General Plan Land Use Designation	Open Space
Zoning	Open Space and Parks (OSP)

1.1 CEQA Requirements

The City of Petaluma, serving as the California Environmental Quality Act (CEQA) Lead Agency, has prepared this Initial Study to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the proposed Oak Hill Well Project (hereafter referred to as the "Project"). The Project as proposed would include the installation and operation of a potable municipal groundwater well to offset the City's need for purchased water from Sonoma Water.

The purpose of this Initial Study is to provide a basis for deciding whether to prepare an Environmental Impact Report, a Mitigated Negative Declaration or a Negative Declaration. This Initial Study has been prepared to satisfy the requirements of CEQA (Public Resources Code, Div 13, Sec 21000-21177) and the CEQA Guidelines (California Code of Regulations, Title 14, Sec 15000-15387). Section 15063(d) of the State CEQA Guidelines states the content requirements of an Initial Study as follows:

1. A description of the project including the location of the project;
2. An identification of the environmental setting;
3. An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
4. A discussion of the ways to mitigate the significant effects identified, if any;
5. An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls;
6. The name of the person or persons who prepared or participated in the Initial Study.

1.2 Project Background

The City of Petaluma has identified a need for new municipal groundwater well sites within its service area to augment and expand its existing system of municipal groundwater supplies. In 2019 and 2020, the City completed well siting studies, in which the following attributes of an ideal well site were considered:

- Parcel owned by the City
- Parcel size, aspect ratio, site access, and wellhead access for maintenance
- Proximity to pressure zones and adequately sized utilities, including water mains, sewer mains, storm drains and electrical power supply
- Proximity to a productive aquifer
- Distances from contaminant releases and plumes, and wells with known water quality impairments
- Other limiting factors, including flood zones, riparian setbacks, protected habitats, cultural resources, threatened or endangered species, land use or code restrictions, and the presence and value of existing structures

The City used an initial screening to identify qualifying parcels for further analysis and to eliminate unqualified parcels. The proposed Oak Hill site was a recommended well site based on the screening criteria. The City observed that the Oak Hill site has existing infrastructure which allows distribution to multiple water system pressure zones and is proximate to existing water system infrastructure.

1.3 Project Location and Existing Setting

The proposed Project site, Assessor's Parcel Number (APN) 006-221-007, is a 5.58-acre City-owned property located in the West Planning Subarea of Petaluma, within Petaluma's existing city limits, urban growth boundary and sphere of influence (see Figure 1, Project Vicinity Map). The Project also would include off-site utility connections on portions of the City-owned Oak Hill Park property, APN 006-181-010, and along a portion of Park Avenue. The Project site is located north of Bodega Avenue and west of Howard Street, and is bordered by Oak Hill Park to the east and by low density residential land uses to the north, south and west along Laurel Street, Amber Way, Wallace Court, and Park Avenue.

The Petaluma General Plan land use designation for the Project site is Open Space, while the zoning designation is Open Space and Parks (OSP). Existing facilities at the Project site include an existing decommissioned 2-million gallon above-ground water storage reservoir and an existing decommissioned booster station. Access to the Project site is provided from the intersection of Park Avenue and Pleasant Street, which is accessed from Bodega Avenue. Existing bollards, swing gates, and fencing are in place to prevent unauthorized vehicle access. Trees within, and adjacent to, the Project site provide nearly complete vegetative screening of existing improvements on the site.

The Project site is located partially within and adjacent to Oak Hill Park, which is designated in the Petaluma General Plan as a 5-acre neighborhood park[1]. Oak Hill Park is owned and maintained by the City of Petaluma and features a children's playground, shaded picnic areas, a single-hoop basketball court, a pétanque court, a dog park area, a community labyrinth, a public restroom, and wooded and lawned open space areas and walking trails.

The Project site is located within the Petaluma Valley Groundwater Basin (Basin Number 2-1), which is prioritized as a medium priority basin by the Department of Water Resources and is required to be

[1] The Petaluma General Plan identifies neighborhood parks as being devoted primarily to serving a small portion of the city, usually within walking and biking distance from residences.

managed in accordance with the Sustainable Groundwater Management Act (SGMA). The Project site is located within the mapped extent of the Wilson Grove Formation aquifer.

The Project site is located within the San Francisco Bay Area Air Basin under the jurisdiction of the BAAQMD. The San Francisco Bay Air Basin is currently designated as non-attainment for the state standards for 8-hour and 1-hour ozone, 24-hour and annual PM10, and annual PM2.5, as well as for the national standards for 8-hour ozone and 24-hour PM2.5.

The Project site is located within the Petaluma River watershed. The Project area is not located within an active Alquist-Priolo earthquake fault zone and no other active or potentially active faults have been mapped within the area. The nearest mapped active fault is the Hayward-Rodgers Creek Fault, located approximately 5.8 miles to the northeast (Kleinfelder 2020).

1.4 Project Description

A description of the proposed production well and associated facilities, Project construction, and Project operation and maintenance activities is provided below (see Figure 2, Project Location Map).

Production Well

The proposed Project consists of the construction and operation of one new municipal groundwater production well within the Petaluma Valley Groundwater Basin. The proposed production well would include an approximately 18-inch diameter production borehole and would be drilled to a depth of approximately 500 feet. The proposed groundwater production well would include a submersible vertical turbine pump with a capacity of approximately 200 to 400 gallons per minute. For the purposes of evaluation, the proposed production well would have an annual average pumping yield of approximately 215 acre-feet per year. The proposed well would be housed in a below-ground vault that would be located near a custom treatment shed that would house equipment for groundwater disinfection, as well as for pH adjustment and iron/manganese removal (if needed).

Custom Treatment Shed

The custom shed would be approximately 170 to 250-square feet in size, approximately 8 to 10 feet in height, and set on a concrete mat foundation with an additional pad for a generator. The exterior building color would be earth tone to integrate visually with the surrounding landscape. A light would be either mounted to the shed or pole-mounted adjacent to the shed. The light would meet Title 24 of the California Code of Regulations standards including shielding, manual switch operation with automatic shut-off, and energy requirements, and would be used only when nighttime access is required. A waste line for overboard water would be connected to the sanitary sewer. The shed may also potentially include a sink that would be connected to the sanitary sewer system, if needed. Disinfection chemicals would be stored within the shed, as needed, for treatment to address the quality of the groundwater. This may include storage containers providing one week volume of chlorine solution mixture (for disinfection), and possibly other chemicals such as sodium hydroxide (for pH adjustment), ammonia or sodium fluoride, if needed. The existing fence around the water reservoir would be extended around the well shed for security purposes.

Piping

Underground piping would be installed to connect the proposed production well to an existing nearby water distribution system located within the Project site. The proposed water connection pipeline would be approximately 125 feet in length and would consist of six-inch ductile iron pipe. Underground piping would

also connect the production well to the sanitary sewer system within Park Avenue to allow discharge of overboard well water, chloraminated water, or filter backwash (if iron/manganese removal is needed). The proposed sanitary sewer connection pipeline would be approximately 450 feet in length and would consist of four to six-inch ductile iron pipe. Completion of a sanitary sewer line connection within Park Avenue would be completed within an approximately one-week period.

Electrical Power

Electrical power for the proposed well station would be supplied by and distributed through the Pacific Gas & Electric Company (PG&E) electrical grid. The proposed well facility would contain a motor control center with a step-down transformer, and a panel board to serve the well pumps, lighting, and other controls. The proposed Project would require installation of approximately 550-feet of new underground power cable extending from the Project site to an existing electrical power pole with a transformer located within a portion of Oak Hill Park (see Figure 2, Project Location Map). The underground electrical line would be installed within an existing access road at the Project site and within a portion of the Oak Hill Park parking lot. Construction of the proposed electrical line across a portion of the paved Oak Hill Park parking lot would be completed within an approximately one-week period. The proposed well facility would have provisions for a drive-up portable generator connection, so that in the event of a power failure the well pumps could continue to run if needed.

Project Construction

Construction of the proposed Project would include installation of the production well and associated facilities including the following:

Construction Duration and Hours

The City is proposing to construct the Project in 2022. Well facility construction would begin with production well drilling, which would require approximately four to eight weeks to complete. At completion of drilling, well facility construction would begin and continue for approximately two months. This would include site preparation activity, foundation and utility connections, installation of the proposed shed and equipment, and start-up and testing. Installation of pipelines would overlap with construction of the well facility including excavation, pipeline installation, backfill of construction trenches, and utility connection.

Petaluma Zoning Code Section 21.040 restricts noise-generating activities at construction sites to the hours between 7:00 a.m. and 10:00 p.m., Monday through Friday and 9:00 a.m. to 10:00 p.m. on Saturday, Sunday and State, Federal or Local Holidays. Construction activities are anticipated to take place within the hours defined in the Petaluma Zoning Code as described above. However, given the nature of production well drilling, it is possible that problems could arise during construction and require temporary continuous operation of the drilling equipment to eliminate a risk of the borehole caving. Therefore, it is possible that during well installation, the operation of the drilling equipment could extend beyond the hours defined by the Petaluma Zoning Code to eliminate the risk of a borehole collapse. Based on the type and extent of work to be performed, it is conservatively assumed that construction could potentially require work beyond the hours defined by the Petaluma Zoning Code for up to two nighttime periods.

Construction Equipment and Sound Attenuation Barriers

Equipment used for well construction would include a truck-mounted drill rig, shaker, support trucks, portable storage tanks, forklift, and loader/backhoe. The maximum number of workers at the site at any time is estimated to be 16.

Well Installation

An area approximately 150 to 200 square feet in size immediately surrounding the proposed well site would be graded (as needed) and covered with gravel base rock to create a level pad for supporting a drill rig and other equipment. An approximately 18-inch diameter production borehole would be drilled to a depth of approximately 500 feet. An approximately 10-inch steel or PVC well casing would be installed within the borehole. A two-inch diameter steel or PVC pipe would also be welded to the well casing to serve as a sounding tube for measuring water levels within the well. An impervious seal consisting of sand/cement grout would be placed in the well annular space above the filter pack. The well casing and well screen would be installed in the borehole. The completed borehole would be logged to confirm the hydrogeologic conditions and the proposed well design.

Well Development and Pump Tests

Development of the well would begin after the annular seal has set for an adequate amount of time. Initial development of the well may be performed using airlift pumping and swabbing of the well screen. Final development of the well may potentially be performed by surging and pumping using a temporary test pump. Various well pumping tests may potentially be performed after final well development. These tests may potentially include: (a) pumping for durations of two hours each at different discharge rates ("step-drawdown test"); and (b) continuous pumping for 12 to 48 hours at the final design capacity of the well ("constant-discharge aquifer test"). Groundwater samples would be collected during the pumping tests to verify the water quality produced.

Well Disinfection and Finishing

When the pumping tests have been completed and the test pump removed, final activities would include video and alignment surveys, as well as disinfection of the completed well. After disinfection, a steel cover plate would be welded on top of the well casing, which would be housed within a vault or alternatively would extend approximately two feet above the ground surface. The well site would be cleaned, the baserock used for the drilling pad would be removed, and mulch would be spread over the site to prevent soil erosion.

Groundwater Discharge

Groundwater generated during the well development and pumping tests would be discharged to the sanitary sewer. The groundwater discharge would be pumped to portable storage tanks and then released to the sanitary sewer such that the discharge rate would not exceed the capacity of the individual sanitary sewer system.

Pipeline and Electrical Installations

The proposed Project would include installation of pipelines to connect the new well to the City's water distribution system and sanitary sewer system. The Project also would require installation of new electrical underground power lines. Proposed pipelines would be installed below ground using standard open-trench construction methods. Trenchless methods, such as directional drilling or jack-and-bore, may potentially be employed for installation of the PG&E underground electrical power line.

Open-trench construction involves the following steps:

– vegetation removal and/or pavement cutting depending on the location,
– trench excavation and shoring to stabilize the sides of the trench if necessary,

– pipeline installation,
– trench backfilling and compacting, and
– surface restoration.

The required pipeline trenches would be excavated up to a depth of approximately six feet. During installation, open trenches within roadways would be covered at the end of each workday with steel plates or similar materials to accommodate vehicle access during non-work hours. Trenchless construction methods, if utilized for the underground electrical line, would entail excavating a sending and receiving pit at either end of the trenchless reach. Soil would be excavated for installation of the well facility and pipelines. Soil excavated during well facility construction and pipeline installation may be used as backfill around the facilities or may be hauled off-site for recycling or disposal.

Construction of the proposed electrical line across a portion of the paved Oak Hill Park parking lot would be completed within an approximately one-week period. Similarly, completion of a sanitary sewer line connection within Park Avenue would be completed within an approximately one-week period.

1.5 Operation and Maintenance

The proposed groundwater production well would be operated on an as needed basis, and for the purposes of evaluation in this Initial Study, it is assumed to be operated continuously in the summer months of each calendar year. The proposed well could be operated continuously or for shorter intervals, depending on the need for water. For the purposes of evaluation, the proposed well facility would have an annual average pumping yield of approximately 215 acre-feet per year.

The City would routinely exercise the well, when not in use, to ensure that the facilities are maintained and remain operational. Well exercising would be anticipated to occur either weekly or monthly. The well would be exercised for one hour per week or for a single, four-hour period monthly. Operators may fine-tune the exercise schedule according to the characteristics of the well. Groundwater pumped during exercising would be discharged to the sanitary sewer system.

The well station may be visited daily by a City Public Works maintenance worker when in operation for routine equipment checks, lasting approximately 30 minutes. When the well is turned off, regular exercising would be conducted as described above. At these times, the well would be visited by a City maintenance worker on a weekly basis or at a frequency determined by on-site conditions. The life of the production well is estimated to be at least 50 years, although the pump may need to be replaced every 15 to 20 years. Therefore, longer term maintenance could include removal and repair or replacement of the pump, valves, and other equipment.

Permanent access to the proposed well site would be needed for servicing the well, associated pumping and disinfection equipment, and for normal operations. Site access would be provided through an existing asphalt concrete driveway that is present at the Project site. Parking would be accommodated within existing asphalt-concrete areas present at the site.

A backup generator would only be used when power is lost. The City would utilize a generator that will be EPA or CARB certified and achieves emission standards for emergency standby sources, consistent with BAAQMD requirements.

1.6 Compliance with Existing Regulations and Standard BMPs

The Project will abide by the following regulations and industry-accepted Best Management Practices (BMPs) to reduce or avoid potential adverse effects that could result from construction or operation of the

Project. In addition to these BMPs, mitigation measures are presented in the following analysis sections in Chapter 3, Environmental Analysis, to reduce potentially significant environmental impacts below a level of significance. The Project's Mitigation Monitoring and Reporting Program will include these actions to ensure implementation.

Implementation of Geotechnical Design Recommendations

As part of the Project design process, the City has engaged a California-registered Geotechnical Engineer to conduct a design-level geotechnical investigation for the proposed Project (Kleinfelder 2020). Project design and construction must comply with the site-specific recommendations made in geotechnical reports for the Project. This will include design in accordance with the seismic and foundation design criteria, as well as site preparation and grading recommendations included in the report. The geotechnical recommendations will be incorporated into the final plans and specifications for the Project and will be implemented during construction.

Implementation of Air Quality Control Measures during Construction

To limit dust, criteria pollutants, and precursor emissions associated with the construction activity, the City will include the following Bay Area Air Quality Management District (BAAQMD) recommended Basic Construction Measures in construction contract specifications for the Project:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas and unpaved access roads) shall be watered two times per day;
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered or shall have at least two feet of freeboard;
- All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping shall be prohibited;
- All vehicle speeds on unpaved areas shall be limited to 15 miles per hour;
- All paving shall be completed as soon as possible after trenching work is finished;
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points;
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation; and
- A publicly visible sign shall be posted with the telephone number and person to contact at the City regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

1.7 Required Agency Approvals

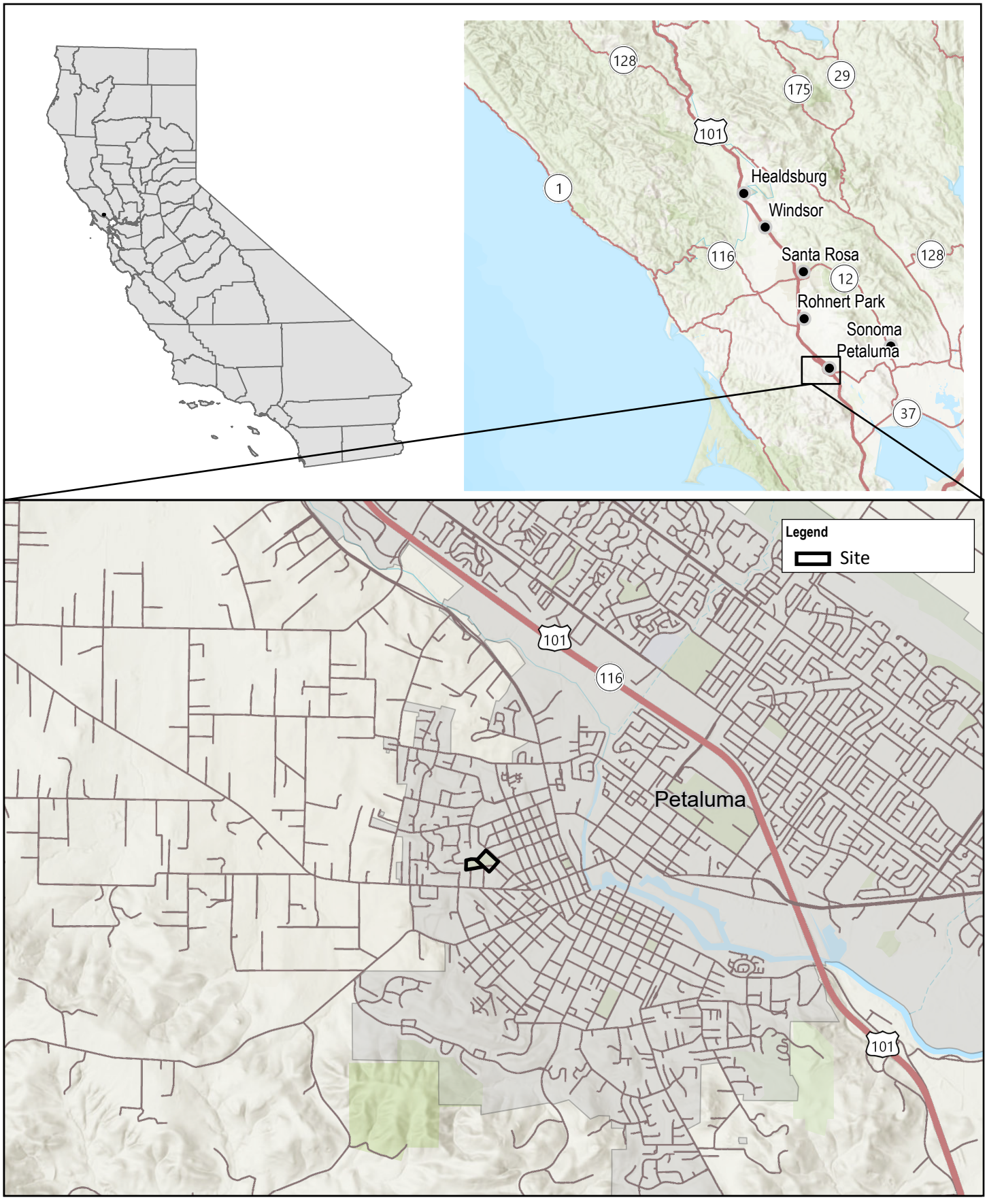
Construction and operation of the proposed Project would be conducted to meet applicable regulations, including local, State, and federal drinking water standards. As CEQA Lead Agency, the City of Petaluma would approve the Project. In addition, the following agencies may be Responsible Agencies or Trustee Agencies under CEQA, and may need to issue approvals for the Project and, thus, may need to rely upon this Initial Study.

- **California Department of Public Health**: Approval of well construction and operation.
- **Bay Area Air Quality Management District**: Permit for portable generator connection.
- **Sonoma County Permit and Resource Management Department**: Approval of well construction permit in accordance with the California Department of Water Resources standards and Section 25B of the Sonoma County Municipal Code.

1.8 Tribal Consultation

On July 20, 2021, the City of Petaluma sent the Federated Indians of Graton Rancheria a tribal consultation invitation pursuant to Public Resources Code section 21080.3.1. A 30-day period allowing for a request for consultation ended with no request made for consultation.

In addition, the Anthropological Studies Center (ASC) requested a review of the Native American Heritage Commission (NAHC) Sacred Lands File for information on Native American cultural resources in the Project area. The search of the NAHC's Sacred Lands File for Sacred Sites in the Project area did not indicate the presence of Native American cultural resources in the Project area. NAHC also provided contact information for tribal communities that may have further information. On July 7, 2021, ASC sent letters to those on the list, which included: Federated Indians of Graton Rancheria, Lytton Rancheria, Cloverdale Rancheria of Pomo Indians, Dry Creek Rancheria of Pomo Indians, Guidiville Indian Rancheria, Middletown Rancheria of Pomo Indians, Mishewal-Wappo Tribe of Alexander Valley, and Pinoleville Pomo Nation. On August 5th, a representative of Lytton Rancheria responded to the notification and stated that the Tribe believes the Project site falls within traditional Pomo territory and that there is a potential for finding tribal cultural resources on the site. For a summary of the investigation and mitigation measures related to cultural and tribal resources, see Section 3.5 Cultural Resources and 3.18 Tribal Cultural Resources.



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City of Petaluma
Oak Hill
Municipal Well Project

Project No. **11225205**
Revision No. **-**
Date **Jan 2022**

Project Vicinity Map

FIGURE 1

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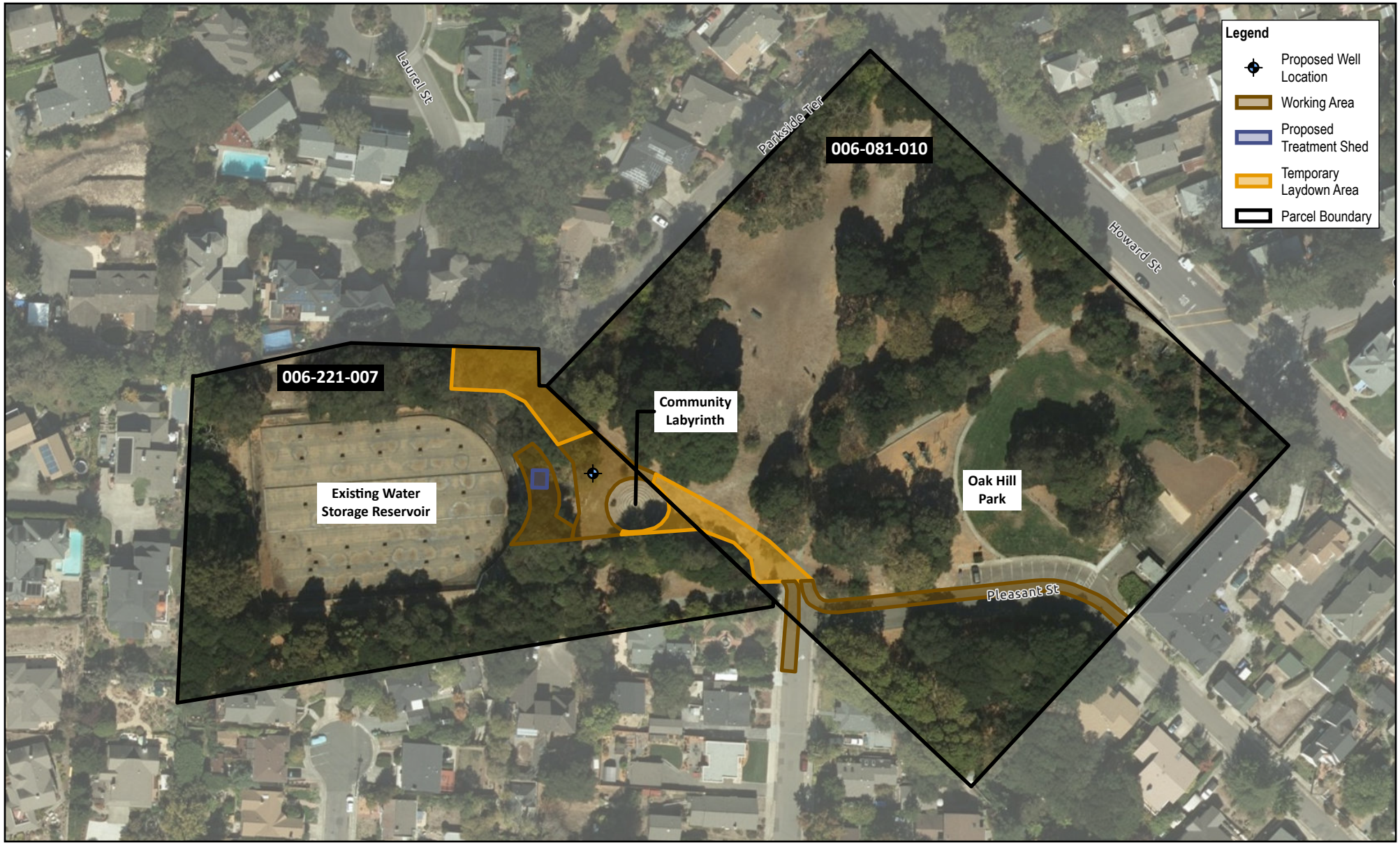

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City of Petaluma
Oak Hill
Municipal Well Project

Project No. **11225205**
Revision No. **-**
Date **Jan 2022**

Project Location Map

FIGURE 2

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2. Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages. Where checked below, the topic with a "Potentially Significant Impact" would be addressed in an environmental impact report:

☐ Aesthetics	☐ Greenhouse Gas Emissions	☐ Public Services
☐ Agricultural & Forestry Resources	☐ Hazards & Hazardous Materials	☐ Recreation
☐ Air Quality	☐ Hydrology/Water Quality	☐ Transportation
☐ Energy	☐ Land Use/Planning	☐ Tribal Cultural Resources
☐ Biological Resources	☐ Mineral Resources	☐ Utilities/Service Systems
☐ Cultural Resources	☐ Noise	☐ Wildfire
☐ Geology/Soils	☐ Population/Housing	☐ Mandatory Findings of Significance

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there would 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 would be prepared.

☐ I find that the proposed 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 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 avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

City of Petaluma Signature

April 25, 2022
Date

3. Environmental Analysis

3.1 Aesthetics

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, 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?				✓
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public view of the site and its surroundings? (Public Views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?				✓
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?		✓		

a) Have a substantial adverse effect on a scenic vista? (No Impact)

The Project site is not located within a General Plan designated scenic vista, along the Petaluma River, or along an open ridgeline or hillside within surrounding foothills. The site is mostly developed with an existing water storage reservoir surrounded by a chain-link fence and a variety of mature trees. The Project site is not within a General Plan designated overlook area or adjacent to a City-designated scenic roadway. Given the surrounding topography and landscape, public views of the Project site are limited to those from the adjacent Oak Hill Park, immediately adjacent single-family residences, and to some extent, adjacent public roads.

The proposed well treatment shed would be located adjacent to the water storage reservoir and would be located behind existing fencing that would be extended at the site, and mostly obscured by the fence and surrounding trees. The fencing to be extended around the well treatment shed would be of the same style and height as the existing fencing. The proposed well would be housed in a below-ground vault. The proposed water, sewer, and electrical connections at the Project site and off-site areas including within Oak Hill Park would be located underground. The improvements would be minimally visible from portions of Oak Hill Park and from surrounding single-family residences. The Project improvements would not substantially alter or block public views. As a result, no impact to scenic vistas would result.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (No Impact)

The California Scenic Highway Program includes a list of officially designated and eligible state scenic highways. The Project site and off-site improvement areas are not located within or adjacent to a state scenic highway (Caltrans 2018). No impact would result.

c) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? (No Impact)

The Project site is located in an urbanized area adjacent to the western corner of Oak Hill Park and in the vicinity of several single-family residences. The Petaluma General Plan land use designation for the Project site is Open Space, while the zoning designation is Open Space and Parks (OSP). The proposed Project is a public utilities facility which is considered an allowed land use under the OSP zoning designation as a use to serve the community. The proposed water, sewer, and electrical connections would be located underground. In addition, as noted above, the on-site improvements would be screened, and only minimally visible from portions of Oak Hill Park and from surrounding single-family residences, while the off-site improvements would be located below-ground. The Project improvements would be consistent with the OSP zoning designation and therefore would not conflict with applicable zoning. No impact would result.

Chapter 17 (Tree Preservation) of the Petaluma Municipal Code provides regulations for the protection, preservation, and maintenance of groves and stands of mature trees. The City's Heritage Tree Ordinance includes a Register of Heritage and Landmark Trees, which includes three pine trees located within Oak Hill Park. The Project would not result in the removal of trees, nor trimming of any of the Heritage or Landmark trees located within Oak Hill Park. Therefore, no impact related to the scenic qualify of the heritage trees would result.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (Less than Significant with Mitigation)

Petaluma Zoning Code Section 21.040 restricts noise-generating construction activities to the hours between 7:00 a.m. and 10:00 p.m., Monday through Friday and 9:00 a.m. to 10:00 p.m. on Saturday, Sunday and State, Federal or Local Holidays. Project construction is expected to last approximately eight to ten weeks, and construction activities are intended to take place within the hours defined in the Petaluma Zoning Code as described above. However, given the nature of well drilling, it is possible that problems could arise that would require temporary continuous operation of the drilling equipment to eliminate a risk of the borehole caving. Therefore, it is possible that during well installation, the operation of the drilling equipment could extend beyond the hours defined by the Petaluma Zoning Code to eliminate the risk of a borehole collapse. Based on the drilling to be performed, construction could require up to 2 nighttime work periods. Although such lighting would be temporary, it may create a new source of light and glare on adjacent residences. The construction-related impact would therefore be potentially significant. Implementation of Mitigation Measure AES-1 would reduce the potential impact of nighttime lighting to a less-than-significant level through implementation of measures to avoid glare during any necessary nighttime construction.

Following construction, the new exterior light on the treatment shed would meet the requirements of Title 24 of the California Code of Regulations and would be placed and shielded to direct light downward. The light would have a manual switch operation with automatic shut-off. Routine maintenance of the proposed groundwater well and treatment equipment would be conducted during daytime hours, when outdoor

lighting would not be necessary. Infrequent nighttime light to accommodate unscheduled as needed maintenance would not cause substantial new sources of light or glare given the light would be shielded and the infrequent and short duration of such site visits, if needed. The impact during operation would be less than significant.

Mitigation Measures

Mitigation Measure AES-1 would reduce the potential impact of nighttime lighting to a less-than-significant level through implementation of measures to avoid glare and light trespass onto adjacent land uses.

Mitigation Measure AES-1: Avoid Glare and Light Trespass

To the extent feasible, construction activities shall be limited to 12-hour shifts between 7:00 a.m. and 7:00 p.m. Continuous 24-hour operations shall only be allowed during the drilling, construction, gravel packing, and sealing of the production well, if necessary to ensure the integrity of the well. The Contractor shall arrange with the City for any 24-hour operations intended and/or required for the successful completion of the Project. Together, the Contractor and the City shall practice good neighbor relations at all times. Night-time drilling operations, if required, shall be conducted in a manner to avoid glare and light trespass that would be a nuisance to adjacent residential and recreational land uses.

The City and its Contractor shall prepare and implement a Nighttime Construction Lighting Plan for any nighttime construction work so as to avoid glare and light trespass that would be a nuisance to adjacent residential and recreational land uses. The lighting plan shall be developed to guide the use of lighting during project construction in such a way as to effectively light the work area while limiting light spill onto adjoining properties. This lighting plan shall include the layout of lighting equipment necessary for any work to be completed at night and descriptions of hardware, including hoods, louvers, shields or other means to be used to control glare and light trespass onto adjoining property. Additional elements of the lighting plan would include suggested corrective actions in the event lighting problems are reported by the public during well drilling operations. The recommendations contained in the Nighttime Construction Lighting Plan shall be incorporated into the final plans and specifications for the Project and implemented during construction.

3.2 Agriculture and Forest Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), 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) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				✓
d) Result in the loss of forest land or conversion of forest land to non-forest use?				✓
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				✓

a - e) Convert farmland, conflict with existing zoning for agricultural use or forest land, or result in the loss of forest land? (No Impact)

The Project site is designated as “Urban and Built-Up Land” on the current Sonoma County Important Farmland Map (CDC 2021). Therefore, the Project would not convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or any other designated farmland type to non-agricultural use. No impact would result.

The Project site is not designated by the California Department of Conservation as being enrolled in an existing Williamson Act Contract (CDC 2018) and is not zoned or used for agricultural purposes. Therefore, the Project would not conflict with existing zoning for agriculture use or a Williamson Act Contract. No impact would result.

The Project is not located on land zoned or used as forest land, timberland, or timberland production. Therefore, the Project would not conflict with existing forest-related zoning and would not result in the conversion of farm or forest lands. No impact would result.

3.3 Air Quality

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district 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) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			✓	
c) Expose sensitive receptors to substantial pollutant concentrations?			✓	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			✓	

a) Conflict with or obstruct implementation of the applicable air quality plan? (No Impact)

The Project is located within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD) and within the San Francisco Bay Area Air Basin. The BAAQMD's 2017 Clean Air Plan (BAAQMD 2017a) is the applicable air quality plan for the San Francisco Bay Area Air Basin. The 2017 Clean Air Plan contains 85 individual control measures in nine economic sectors: stationary (industrial) sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-greenhouse gas pollutants. Many of these control measures require action on the part of the BAAQMD, the California Air Resources Board (CARB), or local communities, and are not directly related to the actions undertaken for an individual development project. The Project would not prevent the BAAQMD from implementing Clean Air Plan actions and none apply directly to the Project. In addition, the size of the Project would be well below emission threshold screening levels for ozone precursors (see discussion in Impact "b" below). As a result, the Project would not conflict with or obstruct implementation of the 2017 Clean Air Plan. No impact would result.

b) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? (Less than Significant)

According to California standards, the San Francisco Bay Area Air Basin is currently designated as a nonattainment area for particulate matter 2.5 microns or less in diameter ($PM_{2.5}$), particulate matter 10 microns or less in diameter (PM_{10}), and ozone. Under national standards, the San Francisco Bay Area Air Basin is currently designated as nonattainment for $PM_{2.5}$ and 8-hour ozone. The Air Basin is in attainment (or unclassified) for all other air pollutants. (BAAQMD 2021)

By its nature, air pollution is largely a cumulative impact, in that individual projects are rarely sufficient in size to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions may contribute to cumulative adverse air quality impacts. Based on the current Air Basin designations, the non-attainment pollutants of concern are ozone, PM_{10}, and $PM_{2.5}$.

Construction

The BAAQMD's 2017 CEQA Air Quality Guidelines provides screening criteria for determining if an individual project could result in significant construction-phase impact relative to criteria pollutants and precursor emissions (BAAQMD 2017b). Criteria air pollutants and precursors include reactive organic gases, nitrogen oxides, PM_{10}, $PM_{2.5}$, and carbon monoxide. In accordance with the BAAQMD's 2017 CEQA Air Quality Guidelines, construction activities would have a less than significant impact to air quality if the following screening criteria are met:

1. The project size is below the applicable screening level size shown in Table 3-1 of the BAAQMD 2017 CEQA Air Quality Guidelines;
2. All Basic Construction Mitigation Measures are included in the project design and implemented during construction; and
3. Construction-related activities would not include any of the following:
    - Demolition activities inconsistent with District Regulation 11, Rule 2: Asbestos Demolition, Renovation and Manufacturing;
    - Simultaneous occurrence of more than two construction phases;
    - Simultaneous construction of more than one land use type;
    - Extensive site preparation; or
    - Extensive material transport (e.g., greater than 10,000 cubic yards of soil import/export) requiring a considerable amount of haul truck activity

Relative to screening criteria, the BAAQMD CEQA Guidelines do not include specific screening level size for public utility facilities and infrastructure improvement projects; however, a general comparison can be made to other similar land uses. For example, the applicable construction-related screening size for a general light industrial land use is 259,000 square feet of facilities and/or a project site that is 11 acres or greater in size. The Project would include less than 1,000 square feet of facilities on an approximately 5-acre site. The Project size would be considerably less than the BAAQMD's construction-related criteria pollutant and precursor screening level for other similar land uses. Therefore, based on the use of the screening criteria found in the BAAQMD Air Quality Guidelines, a detailed air quality study for construction related air emissions is not required for the Project.

Project-related construction activities would not be anticipated to encounter asbestos-containing materials during construction, would not involve the simultaneous occurrence of more than two construction phases, or require construction of more than one land-use type. Construction would not involve extensive site preparation or material transport. The Project would not have a cumulative effect on ozone because it would not exceed the BAAQMD's thresholds of significance for ozone precursors during construction. The Project would result in a short-term increase in fugitive dust emissions from vehicles accessing the site during construction which would include $PM_{2.5}$ and PM_{10}. With implementation of the BAAQMD's recommended basic construction measures identified in Section 1.6 of this Initial Study, the impact of construction-related criteria air pollutants and precursor emissions would be less than significant.

Operation

The BAAQMD's 2017 CEQA Air Quality Guidelines provides operational screening criteria for determining if an individual project could result in a significant operation-related impact relative to criteria pollutants and precursor emissions. Public utility facilities are not listed as a land use type in the BAAQMD operational pollutant screening criteria; however, a general comparison can be made to similar land use types. For

example, the applicable BAAQMD operational screening size for a light industrial facility is 541,000 square feet of facility, or a site that is 72 acres in size, or a project that includes 1,249 employees. In comparison, the Project would include less than 1,000 square feet of facilities on the Project site and would not result in an increase in employees. The Project size would be considerably less than the BAAQMD's operation-related criteria pollutant and precursor screening level for other similar land uses. Therefore, based on the use of the operational screening criteria found in the BAAQMD Air Quality Guidelines, the Project would not result in substantial long-term operational emissions of criteria air pollutants. Therefore, the Project's operational impact would be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations? (Less than Significant)

Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases. Residential land uses are also considered sensitive to air pollution because residents, including children and the elderly, tend to be at home for extended periods of time, resulting in sustained exposure to pollutants, if present. The closest sensitive receptors to the Project site are single family residences located to the north and south of the Project site, as well as intermittent visitors of Oak Hill Park.

The main pollutant of concern for this impact is diesel particulate matter (DPM), which is emitted from construction equipment and heavy-duty truck traffic. Because of the limited scope and short construction period for the Project (eight to ten weeks), no prolonged or intense construction activity would occur. The Project includes implementation of dust and air quality control measures described in Section 1.6, which includes minimizing idling times for trucks and equipment, ensuring that construction equipment is maintained in accordance with manufacturer's specifications, and other measures. Given the short duration of construction and the implementation of air quality control measures, the impact of construction-related emissions on sensitive receptors would be less than significant.

Project operation would not include the use of a new stationary source of DPM or a substantial increase in traffic-related emissions. The proposed well facility would have provisions for a drive-up portable generator connection so that in the event of a power failure the well pump could continue to be run, if needed. A backup generator would only be used when power is lost, and the City would utilize a generator that will be EPA or CARB certified and achieves emission standards for emergency standby sources, consistent with BAAQMD requirements. Therefore, the Project would not generate substantial amounts of operational criteria pollutants or TACs. The operational impact on sensitive receptors to substantial pollutant concentrations would be less than significant.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? (Less than Significant)

Project-related construction activity may result in short-term odors such as diesel exhaust from construction equipment. Such odors would be temporary, occurring only during the construction period, and would disperse rapidly. In addition, the Project includes implementation of air quality control measures described in Section 1.6, which would reduce odors released from construction equipment. The temporary impact during construction would be less than significant.

Municipal groundwater wells are not listed by the BAAQMD as a potential odor source and are not a typical source of odor complaints. Operation and maintenance of the proposed well would not produce direct or indirect odor emissions. Therefore, no odor impact would result during Project operation.

3.4 Biological Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 US Fish and Wildlife Service?				✓
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				✓
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?				✓

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? (Less than Significant with Mitigation)

Special-status species include those plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed and proposed species. Birds and raptors are protected under the federal Migratory Bird Treaty Act (50 CFR 10.13), and their nest, eggs, and young are also protected under the California Fish and Wildlife Code (§3503, §3503.5, and §3513). In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, and CDFW special-status invertebrates, are all considered special-status species. Although CDFW Species of Special

Concern generally have no special legal status, they are given special consideration under CEQA. Plant species on California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants with California Rare Plant Ranks (Rank) of 1, 2 and 4 are also considered special-status plant species and must be considered under CEQA. Bat species designated as "High Priority" by the Western Bat Working Group (WBWG) qualify for legal protection under Section 15380(d) of the CEQA Guidelines. Species designated "High Priority" are defined as "imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats."

A Biological Resources Technical Memorandum was prepared for the Project to evaluate the potential for special-status plant and wildlife species and sensitive habitats (including wetlands) to occur on or in the vicinity of the Project site (GHD 2021). The assessment included literature and database searches as well as a site survey to determine what species and habitats have potential to be present on the Project site. The information and data collected for the assessment have been used as the basis of this biological resources analysis.

Special-Status Plant Species

The Project site is mostly developed with an existing water storage reservoir and is located adjacent to the existing Oak Hill Park, which is a public park maintained and operated by the City of Petaluma. Several mature trees are located within and adjacent to the Project site. The vegetation at the Project site primarily consists of low grass and weedy species and narrow strips of wooded habitat dominated by oak species along the property boundaries. Other surrounding land uses are residential, resulting in numerous exotic and ornamental plant species within and adjacent to the Project site. Based on a site survey, there is little natural habitat structure within the proposed construction area. Records and habitat requirements for special-status plants generated from database searches were reviewed. Based on habitat requirements compared to the existing habitat (highly disturbed area with routine mowing, located at periphery of a public park), the Project site is unlikely to support special-status plants. Therefore, based on literature review, habitat disturbance, and on-site survey observations, no impact to special-status plants would result from implementation of the Project.

Special-Status Wildlife Species

Literature and database searches did not identify any occurrences of special-status wildlife species having been previously recorded on the Project site, none were identified during the site reconnaissance, and no habitat for special-status wildlife species was documented. The Project site is not located within designated critical habitat for any special-status species. No suitable stream or wetland habitat is present on or immediately adjacent to the Project site that would support special-status fish species or amphibian species.

Several nest structures were observed in trees during the site visit, which may be assumed to have previously been occupied by passerine songbirds. Several common avian species also were observed on-site that are protected by the Migratory Bird Treaty Act and Fish and Wildlife Code. Although no tree removal is anticipated to be required for the Project, some tree trimming may potentially be necessary for equipment access. Vegetation removal, tree trimming, and ground disturbance may result in potentially adverse effects to nesting birds, if present. The potential impact to nesting birds during construction is considered significant. With implementation of Mitigation Measure BIO-1 (Prevent Disturbance to Nesting Birds), the temporary impact to nesting birds would be reduced to a less-than-significant level.

Trees adjacent to the Project site also could provide suitable roosting habitat for special-status bats, including cavity/crevice roosters (such as little brown bat [*Myotis lucifugus*]) as well as foliage roosters

(such as hoary bats [*Lasiurus cinereus*]). Therefore, special-status bat species may be adversely affected, if present. The potential impact to special-status bats during construction is considered significant. With implementation of Mitigation Measure BIO-2 (Prevent Disturbance to Bat Species), the temporary impact to special-status bats would be reduced to a less-than-significant level.

Following construction, the operation and maintenance of the proposed well facility would not require tree removals. Operational noise from the well facility would be negligible as the well pump would be submersed in water below ground, and associated appurtenances would contribute minimally to overall noise generation. A backup generator would only be used if power was lost and the City needed to continue utilizing the well until power was restored, making it limited to an infrequent and temporary source of noise. Noise from periodic truck trips during maintenance visits would be similar to existing vehicle noises that access the Project site and Oak Hill Park and would be negligible due to the infrequency and short duration of the visits. The new exterior light on the treatment shed would meet the requirements of Title 24 of the California Code of Regulations and would be placed and shielded to direct light downward. The light would have a manual switch operation with automatic shut-off. Routine maintenance of the proposed groundwater well and treatment equipment would be conducted during daytime hours, when outdoor lighting would not be necessary. Infrequent nighttime light to accommodate unscheduled as needed maintenance would not cause substantial new sources of light that would affect special-status bats. The operational impact would be less than significant.

Mitigation Measures

Mitigation Measures BIO-1 and BIO-2 would reduce the temporary construction-related impacts on protected birds and bats to a less-than-significant level by locating any potential active nests or roosts before the start of construction and establishing buffers and avoiding nests if found.

Mitigation Measure BIO-1: Prevent Disturbance to Nesting Birds

To the extent practical, construction activities should be performed between September 1 and February 1, which is outside the avian nesting season. If work must be performed during the avian nesting season (February 1 – September 1), the City shall ensure that a pre-construction nesting bird survey is performed in areas within 250 feet of project-related activities no more than 7 days prior to ground disturbance. If active nests are found, an appropriately sized no-disturbance buffer shall be placed around the nest at the direction of a qualified biologist conducting the survey. Active nests shall be monitored at least once per week to determine whether birds are being disturbed. Activities that might, in the opinion of the qualified biologist, disturb nesting activities (e.g., excessive noise), shall be prohibited within the buffer zone until such a determination is made. If signs of disturbance or distress are observed, the qualified biologist shall implement adaptive measures to reduce disturbance. These measures may include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed or nesting activity has ceased, placement of visual screens or sound dampening structures between the nest and construction activity, reducing the number of noisy construction activities occurring simultaneously, and/or reorienting and/or relocating construction equipment to minimize noise at noise-sensitive receptors. Buffers shall remain in place until all young have fledged, or the biologist has confirmed that the nest has been naturally predated. If ground disturbance work lapses for seven days or longer during the nesting season, a qualified biologist shall conduct a supplemental avian pre-construction survey before Project work is reinitiated.

Mitigation Measure BIO-2: Prevent Disturbance to Bat Species

To the extent possible, tree limbing shall be performed between September 1 and April 30, which is outside the bat maternity season. If tree limbing must be performed during the bat maternity season (May 1 – August 30), the City shall ensure that a qualified biologist shall conduct a bat habitat assessment of trees to be removed or limbed. The assessment shall evaluate the trees for suitable entry points and roost features and shall provide focused daytime surveys for day-roosting bats. If present, the roost shall be avoided until after September 1 to ensure no adverse effects to maternity bat roosts. Tree removal outside the maternity season shall be performed using a two-step tree removal process which includes allowing any felled trees or tree limbs to be left overnight prior to removal from the site or on-site chipping to allow any bats to exit the roost.

b, c) 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 US Fish and Wildlife Service, including state or federally protected wetlands? (No Impact)

During a reconnaissance-level site visit conducted at the Project site, no potentially jurisdictional wetlands or waters were observed on-site. A search of the USFWS National Wetlands Inventory for the Project vicinity also was completed, the results of which show no wetlands mapped within the Project area. No riparian habitat, wetlands, or other sensitive natural communities are located within the Project site. Therefore, no impact to riparian habitat, wetlands, or other sensitive natural communities would result.

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? (Less than Significant)

No wildlife movement corridors or regional wildlife linkages have been identified within the Project site. The Project site is not located within or near a high-integrity forest habitat or “natural landscape block” identified in the California Essential Habitat Connectivity Project. The Project site does not contain riparian or aquatic habitat or intersect riparian corridors. There is no direct hydrologic connectivity between the Project site and off-site waterbodies, waterways or drainages. No impact on movement of native resident or migratory fish or essential fish habitat would result, and no new barriers to terrestrial wildlife movement would result. The Project would not substantially interfere with migratory birds, bats, or other species. The impact would be less than significant.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (No Impact)

Chapter 17 (Tree Preservation) of the Petaluma Municipal Code provides regulations for the protection, preservation, and maintenance of groves and stands of mature trees. The Municipal Code notes the City’s objective to establish regulations that will result in no net loss of tree canopy in the community. Chapter 17 of the Municipal Code also intends to promote and perpetuate the urban forest through the replacement of trees removed as a result of new development. While some tree trimming near the area of the proposed well site may potentially be necessary for equipment access, no tree removal is anticipated to be required for the Project. Trees that may require trimming would be limited to lower branches, where needed. Therefore, there would be no net loss of tree canopy in the community. The City’s Heritage Tree Ordinance includes a Register of Heritage and Landmark Trees, which includes three pine trees located within Oak Hill

Park. The Project would not result in the removal or trimming of the three Heritage or Landmark trees located within Oak Hill Park. No impact related to trees would result.

Petaluma General Plan policies 4-P-1 through 4-P-5 are intended to protect and enhance biological and natural resources within the City. Policy 4-P-1 seeks to protect and enhance the Petaluma River and its tributaries. The Project site is located within the Petaluma River watershed, approximately 0.6 mile west of the Petaluma River. The Project would not alter the Petaluma River nor one of its tributaries. Drainage patterns at the Project site would remain essentially the same as they currently exist. The Project would result in only a minor increase in impermeable surfaces associated with the well treatment shed (250 square feet) and the well vault. Because construction and operation of the Project would not substantially alter drainage patterns or increase runoff, no indirect effects on the Petaluma River are anticipated. This Initial Study evaluates potential impacts to biological resources and identifies mitigation measures, where applicable, consistent with General Plan policies 4-P-2 through 4-P-5. No conflicts with local policies or ordinances protecting biological resources have been identified. Therefore, no impact would result.

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? (No Impact)

Habitat Conservation Plans and Natural Community Conservation Plans are geographic-specific plans to address effects on sensitive species of plants and animals. There are no such adopted plans covering the Project area. No impact would result.

3.5 Cultural Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?				✓
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		✓		
c) Disturb any human remains, including those interred outside of formal cemeteries?		✓		

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? (No Impact)

The CEQA Guidelines define a historical resource as: (1) a resource listed in the California Register of Historical Resources; (2) a resource included in a local register of historical resources, as defined in the California Public Resources Code (PRC) Section 5020.1(k), or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The Project site is located adjacent to the western corner of City-owned Oak Hill Park and an existing water storage reservoir. Other adjacent land uses include single-family residences to the north and south. Oak Hill Park and the existing water storage reservoir at the Project site are not included on the California Department of Parks and Recreation's California Inventory of Historic Resources, or the State of California Office of Historic Preservation Historic Properties Directory and Built Environment Resource Directory. The Project would not impact a historic resource. No impact would result.

The potential for historic-period archaeological resources is evaluated in impact "b,c" below.

b, c) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5, or disturb any human remains, including those interred outside of formal cemeteries? (Less than Significant with Mitigation)

An Archaeological Resources Study was prepared for the Project by the Anthropological Studies Center of Sonoma State University (ASC 2021). The study assessed the potential for surficial and/or buried archaeological and historical resources in the proposed improvement area through the completion of the following:

– Records and literature search at the Northwest Information Center (NWIC) of the California Historical Resources Information Center (CHRIS);
– Further literature review of publications, files, and maps for ethnographic, historic-era, and prehistoric resources and background information;

– Communication with the Native American Heritage Commission (NAHC) to request a review of the Sacred Lands File and contact information for the appropriate tribal communities;
– Contact with the appropriate local Native American Tribes; and
– Pedestrian archaeological survey of the Project area.

The study determined that the sensitivity of the Project area for prehistoric buried archaeological resources is low. No previously recorded cultural resources located within the proposed improvement area were identified. A pedestrian archaeological survey of the Project site also identified no archaeological resources. The search of the NAHC's Sacred Lands File for Sacred Sites did not indicate the presence of Native American cultural resources in the Project area. However, as noted in Section 3.18 (Tribal Cultural Resources), a representative of Lytton Rancheria indicated that the Tribe believes the Project site falls within traditional Pomo territory and therefore a potential for finding tribal cultural resources on the site exists. If previously unidentified cultural resources are encountered during construction, the impact would be significant. With implementation of Mitigation Measure CUL-1 (Protect Unknown Archaeological Resources during Construction Activities), the potential impact to cultural resources during construction would be reduced to a less-than-significant level.

For historic-era archaeological resources and potential human remains, the sensitivity for buried resources is considered high due to a portion of the Project site being located in the vicinity of a former public cemetery. The public cemetery, known as Oak Hill Cemetery, was utilized from 1868 to 1879. Because it is unclear whether all remains were removed and interred in other cemeteries before the property was converted into a park, it is possible that a burial from the former cemetery could be encountered during construction. Therefore, the possibility of encountering historic-era archaeological resources that contain human remains cannot be discounted. The impact related to the potential disturbance of historic-era archaeological resources and human remains during construction is considered significant. With implementation of Mitigation Measure CUL-2 (Protect Human Remains if Encountered during Construction), the potential impact to human remains during construction would be reduced to a less-than-significant level.

Mitigation Measures

Implementation of Mitigation Measure CR-1 and CR-2 would reduce the potential impact to previously undiscovered archaeological resources and human remains to a less-than-significant level by outlining procedures to be taken in the event of inadvertent discovery of unrecorded resources consistent with appropriate laws and requirements.

Mitigation Measure CUL-1: Protect Unknown Archaeological Resources during Construction Activities

The City shall ensure that archaeological monitoring is performed during installation of subsurface work occurring within the boundary of Oak Hill Park, including the installation of a new PG&E electrical line within the Oak Hill Park parking lot. Monitoring shall be performed by a qualified archaeologist and may also include a Native American monitor and will consist of directly watching the excavation process. Monitoring shall continue until the depth of excavation has been reached at which resources could not be present, as determined by qualified archaeologist. In the event that subsurface archaeological features or deposits, including locally darkened midden soil, are discovered during construction-related earth-moving activities, ground-disturbing activity in the vicinity of the resource shall be halted, a qualified professional archaeologist shall be retained to evaluate the find, and the appropriate tribal representative(s) shall be notified. If the find qualifies as a historical resource or unique archaeological resource as defined by CEQA, the archaeologist shall

develop appropriate measures to protect the integrity of the resource and ensure that no additional resources are affected.

Mitigation Measure CUL-2: Protect Human Remains if Encountered during Construction

If human remains, associated grave goods, or items of cultural patrimony are encountered during construction, work shall halt in the vicinity of the find and the County Coroner shall be notified immediately. The following procedures shall be followed as required by Public Resources Code § 5097.9 and Health and Safety Code § 7050.5. If the human remains are determined to be of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of the determination. The Native American Heritage Commission shall then notify the Most Likely Descendant (MLD), who has 48 hours to make recommendations to the landowner for the disposition of the remains. A qualified archaeologist, the City and the MLD shall make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of any human remains and associated or unassociated funerary objects. The agreement would take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, and final disposition of the human remains and associated or unassociated funerary objects.

3.6 Energy Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			✓	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				✓

a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? (Less than Significant)

Project construction activity would require the temporary use of fossil fuels (gas, diesel, and motor oil) for excavation, grading, and vehicle use. The precise amount of construction-related energy consumption is uncertain. However, construction of the Project would not require a comparatively large amount of fuel or energy usage because of the limited extent and nature of the proposed improvements, the minimal number of construction vehicles and equipment used during construction, and the short construction duration required for a project of this small scale.

Following construction, Project energy consumption would be limited to the electricity needed to operate the well and treatment building. The amount of electricity utilized by the well pump would not be substantial as the pump size is small, would have a variable frequency drive to conserve energy, and would be required to meet current energy efficiency standards. The new exterior light on the custom treatment shed would meet the requirements of Title 24 of the California Code of Regulations energy standards and would have a manual switch operation with automatic shut-off. Fuel consumption would be limited to that utilized by routine maintenance workers as they traveled to and from the site and operation of a portable emergency generator, if needed. Operation and maintenance of the proposed municipal groundwater well would generally require one maintenance visit per day by City staff when the well was operating, and monthly visits when the well was not in operation. Such trips would be combined with routine maintenance trips to the water storage reservoir and Oak Hill Park, further minimizing energy related to maintenance of the Project. Therefore, neither Project construction or operation would result in the use of large amounts of fuel and energy in a wasteful manner. The impact would be less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (No Impact)

In 2003, the California Energy Commission (CEC), the California Power Authority (CPA), and the California Public Utilities Commission (CPUC) jointly adopted an Energy Action Plan (EAP) that listed goals for California's energy future and set forth a commitment to achieve these goals through specific actions. In 2005, the CEC and CPUC approved the EAP II, which identified further actions to meet California's future energy needs, mainly focused on the energy and natural gas sectors. Additionally, the CEC prepared the State Alternative Fuels Plan in partnership with the California Air Resources Board and in consultation with the other state, federal, and local agencies. The alternative fuels plan presents strategies and actions

California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production.

Project construction and operational activities would not conflict with or obstruct implementation of the EAP, EAP II, the State Alternative Fuels Plan, or local goals. Project construction activity would not require a large amount of fuel or energy usage because of the limited extent and nature of the proposed improvements and the minimal number of construction vehicles that would be required for a project of this small scale. Project operation would not result in a substantial increase in energy use. No conflicts with a state or local plan for renewable energy or energy efficiency have been identified. Therefore, no impact would result.

3.7 Geology and Soils

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause 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 a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on, or off, site landslide, lateral spreading, subsidence, liquefaction or collapse?			✓	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect 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?				✓
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		✓		

a.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? (No Impact)

The Project site is not located within an active Alquist-Priolo Earthquake Fault Zone, and no other active or potentially active faults have been mapped within the area. The nearest mapped active fault is the Hayward-Rodgers Creek Fault, located approximately 5.8 miles northeast of the Project site (Kleinfelder 2020). No impact would result.

a.ii) Strong seismic ground shaking? (Less than Significant)

All of Sonoma County is subject to strong seismic shaking that would result from earthquakes along the San Andreas, Healdsburg-Rodgers Creek, and other faults. Moderate to major earthquakes generated on the Hayward-Rodgers Creek Fault and other faults in the region can be expected to cause strong ground shaking at the site.

By applying appropriate engineering practices, potential injury and damage from seismic activity can be diminished, thereby exposing fewer people and less property to the effects of a major damaging earthquake. A design-level geotechnical study was performed for the Project site to generate geotechnical information for the design and construction (Kleinfelder 2020). The geotechnical study includes an evaluation of seismic hazards related to ground shaking and identifies appropriate foundation supports to be used for the proposed well treatment building. As summarized in Section 1.6, the Project would be designed and constructed in conformance with site-specific recommendations contained in the geotechnical investigation completed for the Project. Because the Project would be constructed in accordance with Project-specific recommendations contained in the design-level geotechnical investigation, the potential impact related to strong seismic ground shaking would be less than significant.

a.iii, c, d) Seismic-related ground failure or unstable soils? (Less than Significant)

Soil conditions at the Project site consist of loose to medium dense silty sand fill from the ground surface to an approximate depth of 11 feet. An approximately 3-foot-thick layer of medium dense native silty sand material was encountered below the fill, overlying medium dense to very dense clayey sand. Materials below the fill are interpreted to represent native soil and weak clayey/silty sandstone bedrock of the Wilson Grove Formation. (Kleinfelder 2020)

The geotechnical study identifies appropriate foundation supports to be used for the proposed well treatment building. As summarized in Section 1.6, the Project would be designed and constructed in conformance with site-specific recommendations contained in the geotechnical investigation completed for the Project. This would include design in accordance with recommendations for grading and foundation support and the use of select engineered fill to address unstable soils, if encountered. Because the Project would be constructed in accordance with Project-specific recommendations contained in the design-level geotechnical investigation, the potential impact related to seismic-related ground failure, including liquefaction, expansive or unstable soils, would be less than significant. Additionally, the Project does not include structures intended for permanent human occupancy and would not change the exposure of people from unstable soils.

a.iv) Landslides? (Less than Significant)

Slope stability analysis was performed to assess the current stability of the existing fill slope at the Project site and to subsequently recommend a lateral structure setback from the top of the slope. Based on the slope stability analysis, the foundation for the proposed well treatment building has been sited to be set back a minimum lateral distance of 10 feet from the edge (top hinge point) of the adjacent fill slope at the Project site. As such, the risk associated with landslides would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil? (Less than Significant)

Areas to be disturbed during construction would consist predominantly of soils and hardscapes that have been altered from their original, natural state. Construction of the Project would not require a comparatively large area of ground disturbance because of the limited extent and nature of the proposed improvements, the minimal number of equipment used during construction, and the short construction duration required for

a project of this small scale. As a result, the Project would result in negligible soil erosion or disturbance to native soils and the impact would be less than significant. Additionally, Mitigation Measure HYD-1 (see Section 3.10, Hydrology and Water Quality), requires implementation of erosion control devices during construction which would further minimize the potential for soil erosion or loss of topsoil. Following construction, the Project would not result in soil erosion or loss of topsoil, as disturbed areas would be restored to general pre-construction conditions and no additional ground disturbance would occur. The impact would be less than significant.

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? (No Impact)

The Project would not involve the use of septic tanks or other alternative wastewater disposal systems. No impact would result.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less than Significant with Mitigation)

The City of Petaluma 2025 General Plan Environmental Impact Report did not identify any known paleontological resources or unique geologic features within the City. Although implementation of the Project is not anticipated to destroy a known unique paleontological resource or site, the possibility of encountering paleontological resources cannot be discounted. Therefore, the impact related to the potential disturbance of paleontological resources during construction could be potentially significant. With implementation of Mitigation Measure GEO-1 (Protect Paleontological Resources if Encountered during Construction), the potential impact to such resources during construction would be reduced to a less-than-significant level.

Mitigation Measures

Implementation of Mitigation Measure GEO-1 would reduce potential impacts to paleontological resources by requiring evaluation and salvage of any paleontological resources found during construction. The impact to paleontological resources following mitigation would be less than significant.

> **Mitigation Measure GEO-1: Protect Paleontological Resources if Encountered during Construction**
>
> If a paleontological resource is discovered during construction, all ground disturbing activities within 50 feet of the find shall be temporarily halted but may be diverted to areas beyond 50 feet from the discovery to continue working. An appointed representative of the City shall notify a qualified paleontologist, who will document the discovery as needed, evaluate the potential resource, and assess the nature and significance of the find. Based on the scientific value or uniqueness of the find, the paleontologist may record the find and allow work to continue, or recommend salvage and recovery of the material, if the City determines that the find cannot be avoided. The paleontologist shall make recommendations for any necessary treatment that is consistent with currently accepted scientific practices.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			✓	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			✓	

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Less than Significant)

Construction

The BAAQMD Air Quality CEQA Guidelines do not include screening criteria or significance thresholds for construction-related greenhouse gas (GHG) emissions, and there is no applicable federal, State, or local threshold pertaining to construction-related GHG emissions. Therefore, this analysis uses a qualitative approach in accordance with Section 15064.4(a)(2) of the CEQA Guidelines. Construction activities that would result in Project-related GHG emissions include exhaust emissions from haul trucks, worker commute vehicles, and construction equipment. However, construction-related emissions would not be a considerable contribution to the cumulative GHG impact, given the short duration of construction and limited construction equipment involved in development of the well and associated infrastructure. In addition, the Project includes the implementation of air quality control measures described in Section 1.6, which include minimizing idling times for trucks and equipment, ensuring that construction equipment is maintained in accordance with manufacturer's specifications, and other measures that reduce emissions during construction. Therefore, Project-related GHG emissions during construction is considered less than significant.

Operation

The BAAQMD has established screening criteria to provide lead agencies with a conservative indication of whether a proposed project could result in significant operation-related GHG impacts. If the screening criteria are not exceeded by a proposed project, then the lead agency does not need to perform a detailed GHG assessment, and the potential impact is considered less than significant. For operational activities, several different screening criteria are recommended by the BAAQMD relative to air GHG emissions. For example, detailed GHG assessments are not required for projects such as general light industrial that are less than 121,000 square feet in size (BAAQMD 2017b). The BAAQMD CEQA Guidelines do not include specific screening criteria for utility projects similar to the proposed Project. However, when one compares the screening criteria established for the types of projects described above (i.e., general light industrial), it is reasonable to assume that the Project would be substantially less than the screening criteria. For example, the well treatment building would be only 250 square feet in size. The well pump and treatment building would be powered by electricity, therefore, no direct on-site GHG emissions would occur during operation. The amount of electricity utilized by the well pump would not be substantial as the pump size is small, would have a variable frequency drive to conserve energy, and would be required to meet current energy

efficiency standards. The proposed well facility would have provisions for a drive-up portable generator connection so that in the event of a power failure the well pump could continue to run if needed. The generator would only be used when power is lost, and the City would utilize a generator that is EPA or CARB certified and achieves emission standards for emergency standby sources, consistent with BAAQMD requirements. Other operational GHG emissions would be limited to emissions from periodic maintenance vehicles, which would generally require one maintenance visit per day by City staff when the well was operating, and monthly visits when the well was not in operation. Such trips would be combined with routine maintenance trips to the water storage reservoir and Oak Hill Park, further minimizing energy related to maintenance of the Project. Therefore, the Project would not generate substantial amounts of GHG pollutants, and the operational impact on GHG emissions would be less than significant.

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (Less than Significant)

State Regulations

Current California laws, including Senate Bill 32 (SB32), require a 40% reduction in GHG emissions below 1990 levels by 2030. The CARB 2017 Climate Change Scoping Plan (CARB 2017) provides strategies for meeting the mid-term 2030 GHG reduction target set by SB32. The 2017 Climate Change Scoping Plan also identifies how the State can substantially advance toward the 2050 greenhouse gas reduction target of Executive Order S-3-05, which consists of reducing GHG emissions to 80 percent below 1990 levels. The recommendations cover several key sectors, including energy and industry, transportation, natural and working lands, waste management, and water. The recommended measures in the 2017 Scoping Plan are broad policy and regulatory initiatives that will be implemented at the State level and do not relate to the construction and operation of individual projects. Although Project construction and operation may be affected by State level regulations and policies that will be implemented, such as the Phase 2 heavy-duty truck greenhouse gas standards proposed to be implemented within the transportation sector, the Project would not impede the State from developing or implementing the GHG reduction measures identified in the Scoping Plan. Therefore, the Project would not conflict with SB32 or the 2017 Climate Change Scoping Plan.

Petaluma Climate Emergency Resolution and Emergency Action Framework

On May 6, 2019, the City of Petaluma passed a Climate Emergency Resolution (Resolution 2019-057) that calls for achieving carbon neutrality no later than 2045. On January 11, 2021, the City adopted a Climate Emergency Action Framework, which recommends the City achieve carbon neutrality by 2030. As discussed in the City's Climate Emergency Action Framework, the GHG emission inventories conducted in 2010 to 2015 showed that emissions associated with building energy use and water and wastewater emissions have decreased.

The City's Climate Emergency Action Framework includes goals for reducing sources of GHGs and increasing carbon sequestration. Goals include eliminating transportation emissions by reducing Vehicle Miles Traveled (VMT), eliminating emissions from the building sector, by increasing waste diversion, enhancing the urban forest, and reducing consumption emissions. The proposed well pump and building lights would be electric powered. The facility would not utilize natural gas or propane. The amount of electricity utilized by the well pump would not be substantial as the pump size is small, would have a variable frequency drive to conserve energy, and the well and treatment building would be required to meet current energy efficiency standards. The proposed well facility would have provisions for a drive-up portable generator connection so that in the event of a power failure the well pump could continue to run if needed.

A backup generator would only be used when power is lost, and the BAAQMD requires generators to be either EPA or CARB certified and achieve emission standards for emergency standby sources. The temporary use of a generator during a power outage would not generate substantial amounts of GHG pollutants. The generator would be EPA or CARB certified and achieve emission standards for emergency standby sources, consistent with BAAQMD requirements. Other operational GHG emissions would be limited to emissions from periodic maintenance vehicles, which would be minimal, generally requiring one maintenance visit per day by City staff when the well was operating, and monthly visits when the well was not in operation. Such trips would be combined with routine maintenance trips to the water storage reservoir and Oak Hill Park, further minimizing energy related to maintenance of the Project. Therefore, the Project would not conflict with or impede the goals identified in the City's Climate Emergency Action Framework.

Petaluma General Plan and Climate Action and Adaptation Plan

The Petaluma 2025 General Plan includes several goals, policies, and programs for reducing GHG emissions, none of which apply to the proposed groundwater well and its associated facilities. As summarized in Table 4.5-1 of the Petaluma General Plan, projected emissions for 2025 related to "Municipal Services – Water & Sewer" accounted for only 1% of the total estimated community-wide GHG emissions, indicating water and sewer facilities represent a small portion of the City's greenhouse gas emissions footprint.

As part of the City's ongoing General Plan update, the City is preparing a Climate Action and Adaptation Plan, which will be both a technical document used to guide city decision-making and a visionary document used by the public to understand the direction of the community. The Plan will include a GHG inventory, reduction analysis, and a climate equity assessment that will serve as a foundation for the plan alongside community engagement and visioning. The Plan has not been drafted or adopted at the time of this Initial Study, and therefore cannot provide an analysis of the Project's potential to conflict with the Plan at this time. The Project would not conflict with or impede implementation of the 2025 General Plan goals related to GHG emissions.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
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 or excessive noise for people residing or working in the project area?				✓
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				✓
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?		✓		

a, b) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (Less than Significant)

Construction

Construction of the Project would not include demolition of structures that may contain hazardous building materials or handling of soil or groundwater within areas of known contamination. Construction activities would involve the use of hazardous materials such as fuels, lubricants, paints and solvents. Routine transport of hazardous materials to and from the Project site during construction could result in an incremental increase in the potential for accidents, however, numerous laws and regulations ensure the safe transportation, use, storage and disposal of hazardous materials. For example, the California Department of Transportation and the California Highway Patrol regulate the transportation of hazardous

materials and wastes, including container types and packaging requirements, as well as licensing and training for truck operators, chemical handlers, and hazardous waste haulers. Worker safety regulations cover hazards related to the prevention of exposure to hazardous materials and a release to the environment from hazardous materials use. The California Division of Occupational Safety and Health (Cal-OSHA) also enforces hazard communication program regulations, which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees. Because contractors would be required to comply with existing and future hazardous materials laws and regulations covering the transport, use and disposal of hazardous materials, the Project's construction-related impact would be less than significant.

Operation

The well treatment shed would include a storage container providing one week volume of chlorine solution mixture or tablets (for disinfection), and possibly other chemicals such as sodium hydroxide (for pH adjustment), ammonia or sodium fluoride, if needed. The proposed well treatment shed would be located adjacent to the water storage reservoir and would be located behind existing fencing that would be extended at the site for security purposes. Only City maintenance staff would have access to the treatment shed. Transport of water treatment chemicals are regulated by Caltrans and the CHP, by standards for container types and packaging requirements, as well as licensing and training for truck operators, chemical handlers, and hazardous waste haulers. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are regulated by the CHP, which conducts regular inspections of licensed transporters to assure regulatory compliance. The California Uniform Fire Code, Article 80, includes specific requirements for the safe storage and handling of chemicals. These requirements are intended to reduce the potential for an accidental release and for mixing of incompatible chemicals. Design of the chlorine injector and storage at the well treatment shed would be required to comply with the current Uniform Fire Code requirements and other applicable federal, State, and local regulations. Therefore, because the City would be required to comply with these laws and regulations that are designed to protect the public against potential hazards associated with the use of chemicals and accidental chemical releases, the impact would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (Less than Significant)

The Project site is located approximately 0.25-mile northeast of Valley Vista Elementary School, and 0.25-mile northwest of St. Vincent Elementary School. Construction activities would include the use of materials such as fuels, lubricants, paints, and solvents, which are commonly used during construction, are not acutely hazardous, and would be used in small quantities. Operation would include the storage of disinfection and pH chemicals, which are not acutely hazardous. Numerous laws and regulations ensure the safe transportation, use, storage, and disposal of hazardous materials (see Impact "a" and "b" above). Although construction or operation activities could result in the inadvertent release of small quantities of hazardous construction chemicals, a spill or release would not be expected to endanger individuals at either of the elementary schools given the nature of the materials and the small quantities that would be used (i.e., one week volume of chlorine solution mixture or tablets). Because the City and its contractors would be required to comply with existing and future hazardous materials laws and regulations covering the transport, use, and disposal of hazardous materials, and because of the nature and quantity of the hazardous

materials to be potentially used by the Project, the impact related to the use of hazardous materials during construction within one-quarter mile of a school would be less than significant.

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? (Less than Significant)

The provisions in Government Code Section 65962.5 are commonly referred to as the "Cortese List." A search of the Cortese List was completed to determine if any known hazardous waste sites have been recorded on or adjacent to the Project site, including review of:

– Department of Toxic Substances Control EnviroStor database;
– List of Leaking Underground Storage Tank Sites from the Water Board GeoTracker database;
– List of solid waste disposal sites identified by the Water Board with waste constituents above hazardous waste levels;
– List of "active" Cease and Desist Orders and Cleanup and Abatement Orders from the Water Board; and
– List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code.

The Project would not occur on any sites identified in the above-mentioned lists compiled by the California Environmental Protection Agency, Regional Water Quality Control Board, California Department of Toxic Substances Control, or the CalRecycle Waste Management Board Solid Development Waste Information System. The nearest waste site is a gas station located approximately 0.4 mile to the southeast of the Project site on Washington Street. Given the distances of the Project site from any active environmental cases, the potential to encounter hazardous materials in soil or groundwater at the Project site is minimal. The impact is less than significant.

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 or excessive noise for people residing or working in the project area? (No Impact)

The Project site is not located within two miles of a public use airport or a private airstrip covered by the Sonoma County Airport Comprehensive Land Use Plan. The nearest airport, Petaluma Municipal Airport, is located approximately 2.75 miles east of the Project site. No impact would result.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (No Impact)

Petaluma provides life safety measures and measures for the rapid resumption of impacted government, community and business services. The City's response to an emergency incident is coordinated through an Emergency Operations Center, which utilizes the Incident Command System for unity of command and control. The County of Sonoma manages a county-wide evacuation map, which includes zones for areas inside Petaluma. The Project site is located within Evacuation Zone PTL-005B.

Petaluma's Local Hazard Mitigation Plan (Petaluma 2020) assesses risk posed by natural and human-caused hazards, identifies ways to reduce those risks, and allows the City to be eligible for mitigation grant funding. The Local Hazard Mitigation Plan addresses minimizing impacts from natural hazards, such as drought, earthquakes, flooding, sea level rise, severe weather, extreme heat, and wildfires.

As discussed in Section 3.14, Population and Housing, implementation of the Project would not induce population growth. Because the Project would not add new population or off-site roadway changes, the Project would not change existing circulation patterns, would not generate substantial new traffic, and would not effect any emergency response routes. Therefore, the Project would not physically interfere with any emergency response or evacuation elements associated with Petaluma's Emergency Operations Plan or Local Hazard Mitigation Plan. No impact would result.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (Less than Significant with Mitigation)

The Project site and off-site improvement areas are not located within the boundaries of the City's designated high fire hazard zone (Petaluma 2007). The Project site and off-site improvements are located in a Local Responsibility Area (LRA), which is an area where a local agency, in this case the City of Petaluma, has primary responsibility for fire and emergency response. Based on current California Department of Forestry and Fire Protection mapping, the Project site is not within a designated hazard severity zone. Although the Project site and off-site improvement areas are not located within designated areas at risk of wildland fires, it is possible that accidental fire ignition could occur during construction (e.g. related to heavy machinery usage). Because the vegetation at the Project site could be dry during construction, and because of the close proximity of nearby residences, the construction-related impact is considered significant. With implementation of Mitigation Measure HAZ-1 (Reduce Wildland Fire Hazards during Construction), the potential impact related to wildland fires during construction would be reduced to a less-than-significant level.

Following construction, the Project site would not result in new structures within designated areas at risk of wildland fires. The proposed municipal well would be connected to the City's water distribution system and fire hydrants and would provide added water pressure to the local system. In addition, the well house would have bypass piping which could be connected to fire hoses if needed. No operational impact would result.

Mitigation Measures

Implementation of Mitigation Measure HAZ-1 would require the use of construction techniques that would reduce the likelihood of wildland fires during construction of the Project. With implementation of Mitigation Measure HAZ-1, the impact related to wildland fires would be less than significant.

Mitigation Measure HAZ-1: Reduce Wildland Fire Hazards during Construction

Prior to construction, the City and its contractor(s) shall remove and/or clear away dry, combustible vegetation from the construction site. Grass and other vegetation less than 18 inches in height above the ground shall be maintained where necessary to stabilize the soil and prevent erosion. Vehicles shall not be parked in areas where exhaust systems contact combustible materials. Fire extinguishers shall be available on the construction site to assist in quickly extinguishing any small fires, and the contractors shall have on site the phone number for the local fire department.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?		✓		
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			✓	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site?			✓	
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			✓	
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			✓	
iv. Impede or redirect flood flows?				✓
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				✓
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			✓	

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? (Less than Significant with Mitigation)

Construction

The Project site is located more than half a mile from the nearest blue line stream and no aquatic drainages are located on-site. There is no direct hydrologic connectivity between the Project site and off-site waterbodies, waterways or drainages. Temporary construction activities have the potential to degrade water quality that could be discharged to the local storm drain system as a result of erosion caused by earthmoving activities or the accidental release of hazardous construction chemicals. Therefore, if not properly managed, construction activities could result in erosion, as well the discharge of chemicals and materials. In such an instance, applicable water quality standards and waste discharge requirements could

be violated, and polluted runoff could substantially degrade water quality in the local storm drain system. The impact is considered significant. With implementation of Mitigation Measure HYD-1, provided below, the impact would be less than significant.

Operation

The City proposes to provide treatment as needed to meet State and federal drinking water standards for bacteria and micro-organisms, pH, iron, manganese, nitrate, and other similar constituents. The proposed treatment systems are capable of providing required levels of disinfection, pH adjustment, reduction in iron and manganese concentrations, and other constituents so that State and federal drinking water standards would be met. The groundwater to be pumped from the proposed well would, therefore, be required to meet Title 22 drinking water standards, and would not violate drinking water standards.

A search of databases providing information about the location of known hazardous materials release sites indicates that there are no open hazardous sites within the construction area boundaries of the Project site or within 0.25 mile of the Project site (see impact “d” in Section 3.8 of this Initial Study). Based on the location of the Project site and the lack of reported release sites in the vicinity of the proposed well, it is highly unlikely that operation of the proposed well would either entrain contaminated groundwater or cause a negative affect at an existing groundwater remediation site.

Groundwater generated during pump testing and maintenance would be discharged to the local sanitary sewer. No discharge of groundwater to surface water or the storm drain system would result.

The impact associated with operation of the proposed municipal groundwater well would be less than significant.

Mitigation Measure

Implementation of Mitigation Measure HWQ-1 would reduce potential construction-phase impacts relative to water quality standards and waste discharge requirements to a less-than-significant level by requiring implementation of best management practices and compliance with applicable State and local requirements.

Mitigation Measure HYD-1: Implement Storm Water Control Measures During Construction

The City and its contractor shall implement Best Management Practices to prevent the discharge of construction waste, debris or contaminants during construction activities. Best Management Practices may include, but would not be limited to, the following:

- Existing vegetation on the construction site shall be maintained to the maximum extent feasible.
- Areas of disturbed soil shall be reseeded and covered with vegetation as soon as possible after disturbance.
- Erosion control devices shall be installed in coordination with clearing, grubbing, and grading. Such devices shall include perimeter sediment controls (perimeter silt fence, fiber rolls), stabilized construction exits, stockpile management, and wind erosion control.
- BMPs shall be implemented to prevent the release of hazardous construction chemicals during construction. Such BMPs shall include material handling and waste management, material stockpile management, management of any washout areas, control of vehicle/equipment

fueling to contractor's staging area, vehicle and equipment cleaning performed off site, and spill prevention and control.

- If more than one acre of land would be disturbed, the City and/or contractor shall obtain coverage under State Water Resources Control Board Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, as amended by Order No. 2012-0006. The City shall comply with all provisions of the permit, including development and implementation of a Storm Water Pollution Prevention Plan.

b, e) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin, or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (Less than Significant)

An evaluation of Project consistency relative to the Petaluma Valley Groundwater Sustainability Plan (GSP), the San Francisco Bay Area Water Quality Control Plan, and the City of Petaluma General Plan is provided below.

Petaluma Valley Groundwater Sustainability Plan

In 2014, the State of California enacted the Sustainable Groundwater Management Act (SGMA), which requires groundwater basins and subbasins in California designated as high- or medium-priority by the California Department of Water Resources (DWR) to be managed sustainably. The Project site is located within the western most portion of the Petaluma Valley Groundwater Basin (Basin Number 2-1) within the City limits. The Petaluma Valley Groundwater Basin (Basin) is prioritized as a medium priority basin by DRW and is required to comply with SGMA.

The Petaluma Valley Groundwater Sustainability Agency (GSA) was formed in June 2017 to meet SGMA requirements. The Petaluma Valley GSA formed through a Joint Exercise of Powers Agreement entered by the North Bay Water District, Sonoma County, Sonoma Water, Sonoma Resource Conservation District (RCD), and the City of Petaluma.

On December 8, 2021, the GSA adopted a GSP for the Basin and directed staff to submit the GSP to DWR for approval (Sonoma Water 2021). DWR will have two years to review the GSP before it is final.

The Petaluma Valley GSP has defined the following Sustainability Goal for the Basin:

"…to adaptively and sustainably manage, protect and enhance groundwater resources while allowing for reasonable and managed growth through:

- *Careful monitoring of groundwater conditions;*
- *Close coordination and collaboration with other entities and regulatory agencies that have a stake or role in groundwater management in the Basin; and*
- *A diverse portfolio of projects and management actions that ensure clean and plentiful groundwater for future uses and users in an environmentally sound and equitable manner"*

Basin Setting

The Basin is located immediately north of San Pablo Bay and is bounded on the east by the Sonoma Mountains and the west by low-lying hills. The approximately 46,000-acre Basin stretches from the Baylands northward, incorporating the City of Petaluma and the communities of Penngrove and Lakeville.

The Petaluma River, which is the principal stream draining the Basin, is located within the larger Petaluma Valley watershed.

Groundwater resources are variable throughout the Basin. Wells in the Petaluma Formation aquifer unit, which covers the largest area of the Basin, generally have low yields. Wells in the Wilson Grove Formation aquifer unit are generally considered to be fair to good groundwater producers. Wells in the Sonoma Volcanics Formation aquifer unit, in which the proposed well would be located, have large variations in water-bearing properties.

The aquifer system is recharged primarily through streambed recharge along portions of Petaluma River and its tributaries, as well as through direct infiltration of precipitation and along the margins of the valley areas (mountain-front recharge). Groundwater is discharged to the Petaluma River, streams, springs, seeps, interconnected wetlands, through evapotranspiration, and by groundwater pumping.

Sustainable Management Criteria

As required by SGMA, the GSP includes management criteria for six sustainability indicators. Sustainability indicators refers to any of the effects caused by groundwater conditions occurring throughout the Basin that, when significant and unreasonable, cause undesirable results, as described in Water Code Section 10721(x). The Petaluma Valley GSP includes sustainability indicators for the following six undesirable results:

– Chronic lowering of groundwater levels
– Reduction in groundwater storage
– Seawater intrusion
– Degraded groundwater quality
– Land surface subsidence
– Depletion of interconnected surface water

The GSP identifies undesirable results, minimum thresholds, measurable objectives, and interim milestones for each sustainability indicator. An evaluation of the Project relative to each sustainable criterion is provided below. Operation of the proposed municipal groundwater well is not anticipated to conflict with the GSP, as operation of the municipal well would not result in groundwater conditions within the Basin that would cause unreasonable or undesirable results. The impact would be less than significant.

Chronic Lowering of Groundwater Levels

The GSP defines the minimum threshold for lowering of groundwater levels as follows: “maintain above historical low elevations while accounting for drought/climate variability and protect at least 95% of nearby water supply wells.” Applying this criterion, a significant impact would result if chronic lowering of groundwater levels occurs that significantly exceed historical levels or cause significant and unreasonable impacts to beneficial users. The metric for this threshold is for the groundwater levels to be shallower (more protective) of historical low elevations, minus 4-year drought, or above the 95th percentile of nearby water supply well depths. This criterion will be measured through monthly or monthly-averaged groundwater levels measured at representative monitoring wells throughout the Basin. The measurable objective within stable wells is to maintain groundwater levels within historical observed ranges, with the metric being the historical median spring groundwater elevation.

The proposed groundwater well production zone will be in the Sonoma Volcanic Formation, the bedrock formation for the basin. A 100-foot sanitary seal would be installed to isolate the overlying Wilson Groove

Formation and draw groundwater from fracture zones in the underlying Sonoma Volcanics. In the area of the proposed well, the Wilson Groove Formation is a thin veneer overlying the Sonoma Volcanic Formation, consisting of a relatively thin saturated zone if present. Depth to first water is expected to be between 50 and 80 feet below ground surface. The proposed well would draw water from fractured bedrock that is marginally hydraulically connected to the primary aquifer of the Petaluma Valley Basin. Based on the location, projected production volume of the proposed well, and lack of connection to the primary aquifer, the proposed municipal well should not significantly influence the groundwater levels in the Petaluma Basin.

Groundwater modeling conducted as part of the GSP indicates that the Project would have a small effect on regional groundwater elevations and would not affect beneficial uses of groundwater in the basin. The volume of groundwater to be extracted (maximum of 215 acre-feet per year) is a very small portion of the groundwater extracted in the basin and when combined with historical pumping is less than the volume of annual groundwater projected to be used by the City of Petaluma in the GSP. Analysis of water elevations indicates that there is little correlation between the volume of the City's groundwater extraction and a change in groundwater evaluations. Therefore, groundwater depletion impacts would be less than significant.

Based on the Project description and analysis of hydrogeologic data, the proposed well is assumed to have a maximum production of 215 acre-feet in one year (pumping 8-hours/day, 365 days/year at a rate of 400 gpm). It is likely that the proposed well would be pumped seasonally, and that average annual well production would be less that 215-acre-feet.

To investigate the potential well interference impacts of such pumping on nearby wells (i.e., the localized drawdown of the groundwater level at nearby wells owned by others), a well interference analysis was conducted. The nearest groundwater well to the Project site is located approximately 550 feet away from the proposed well site. It is unlikely that the operation of the City's proposed well would have any influence on the private well, which draws groundwater from the Wilson Grove Formation. The proposed municipal well would have a 100-foot seal and would only draw water from the volcanic bedrock, below the Wilson Grove Formation. The privately owned off-site well is shallow and is assumed to provide a low volume of water for irrigation use. Most well pumps can be operated across a wide range of pressure demands, and it is unlikely that seasonal operation of the proposed municipal well would result in change in production capacity of the existing off-site well. Pumping at nearby wells would not be substantially affected by the extent of drawdown by the worst-case conditions of the Project, and that the existing land uses could still be supported. Therefore, well interference impacts would be less than significant.

Reduction in Groundwater Storage

The GSP establishes a minimum threshold for reduction in groundwater storage as the same as the minimum threshold for the chronic lowering of groundwater levels, to maintain groundwater condition above historic lows. This criterion is to be measured by calculating the annual groundwater storage and comparing changes in contoured groundwater elevations. Monitoring for the chronic lowering of groundwater levels will be used to compare with minimum threshold and measurable objectives.

Applying this criterion, a significant impact would result if a reduction of groundwater storage caused significant and unreasonable impacts to the long-term sustainable beneficial use of groundwater in the basin, as caused by either long-term reductions in groundwater storage or pumping exceeding the sustainable yield.

The proposed municipal well would draw water from the Sonoma Volcanic Formation and not from either the Petaluma or Wilson Grove formations, which make up the primary water production zones in the Petaluma Valley Basin. Water production from the proposed well would have little or no impact on overall

groundwater storage or sustainable yield in the Basin since it is drawing water from a water source that is marginally hydraulically connected. The Project would have minimal effect on groundwater storage and would not cause groundwater elevations to drop below the documented historic low levels and will not affect beneficial uses of groundwater in the basin. Therefore, any reduction in groundwater storage impacts would be less than significant.

The Project would result in only a minor increase in impermeable surfaces associated with the well treatment shed (250 square feet) and the well vault, resulting in less than significant impacts to groundwater recharge.

Seawater Intrusion

The GSP establishes a minimum threshold of a 250 mg/L chloride isocontour located in an area that is protective of beneficial users of groundwater. This minimum threshold isocontour is initially located between the currently inferred 250 mg/L isocontour (inferred interface of brackish groundwater) and beneficial users of groundwater (known water wells supplying beneficial users). Under this criterion, a significant impact would result if seawater intrusion occurred inland of areas of existing brackish groundwater that may affect beneficial uses of groundwater is significant and unreasonable.

The Project site is located on the western boundary of the groundwater basin and the nearest portion of the Petaluma River is located approximately 0.6 mile to the east. Baylands are located over two miles southeast of the Project site. Because the proposed well site is located up gradient of areas where groundwater elevations are below sea level, the Project would have, at most, a negligible effect on seawater intrusion. The proposed well is located several miles from the Bay, would have a relatively low production, and is marginally hydraulically connected to the primary aquifer, therefore the potential for influencing saltwater intrusion is very low and impacts would be less than significant.

Degraded Groundwater Quality

The GSP sets the minimum threshold for groundwater quality based on two additional supply wells exceeding the applicable maximum contaminant levels (MCLs) for arsenic, nitrate, or salts (measured as Total Dissolved Solids or TDS). Under this criterion, a significant impact would result if well production results in an increase in the concentration of these constituents of concern in groundwater that leads to adverse impacts on beneficial users.

The proposed well would have a 100-foot sanitary seal to prevent any degradation of the groundwater from surface contaminants such as nitrates. Water produced from the Sonoma Volcanics fracture zone may have dissolved minerals, but would be treated at the well site if needed to be compliant with MCLs and Title 22 drinking water standards, and conveyed directly to distribution piping. Based on the location of the proposed well and water quality data from other wells in the area, salinity is not of concern. The minimum thresholds for water quality would not be exceeded. The impact would be less than significant.

Land Surface Subsidence

The GSP sets the minimum threshold for Land Subsidence as 0.1 foot per year of total subsidence. Under this criterion, a significant impact would result if any rate of inelastic land subsidence caused by groundwater pumping is a significant and unreasonable condition.

No subsidence is likely to occur in the area of the proposed well. The subsurface consists of a thin veneer of the Wilson Grove Formation overlying the Sonoma Volcanics which is targeted for water production. Depth to first groundwater is likely between 50 and 80-feet below the surface. A planned sanitary well seal

would extend to 100-feet below ground surface. Water production from hard rock would not yield any land subsidence and no land subsidence impacts would result.

Depletion of Interconnected Surface Water

Depletion of surface water from interconnected streams occurs when surface water depletion, caused by groundwater pumping within the Basin, exceeds historical streamflow depletion or adversely impacts the viability of groundwater dependent ecosystems (GDEs) or other beneficial users of surface water. Shallow groundwater elevations are used as a proxy for stream flow depletion. The minimum threshold is set at 1 foot below the 2020 dry-season average minimum groundwater levels. The nearest "blue line" stream or open water body relative to the Project site is the Petaluma River, which is located approximately 0.6 mile east of the Project site. Because of the vertical and horizontal separation of local groundwater within the aquifer and the Petaluma River and other surface waters, along with the distance of the Project site to the Petaluma River and other smaller creeks, it is unlikely that groundwater from the Project vicinity is providing recharge to the river and surface streams. The proposed well would be drilled to a depth of approximately 500 feet and pumping would occur from deep in the Sonoma Volcanic rock formation that is marginally hydraulically connected to the primary aquifer. Therefore, Project pumping is not anticipated to have a noticeable effect on surface water flows or contribute cumulatively to historical depletion of other beneficial users of surface waters. The impact would be less than significant.

San Francisco Bay Area Water Quality Control Plan

The Project site is located within the area subject to the San Francisco Bay Area Water Quality Control Board's Water Quality Plan (Basin Plan). The Basin Plan lists action plans and policies to achieve water quality objectives, protect present and future beneficial water uses, protect public health, and prevent nuisance (SFBRWQCB 2019). The Basin Plan establishes thresholds for key water resource protection objectives for both surface waters and groundwater. As described above, the Project site is not located near a stream or river and would not alter water quality parameters established in the Basin Plan. During well construction, zone sampling would occur to determine water quality. Groundwater generated during pump testing and maintenance would be discharged to the local sanitary sewer. No groundwater containing elevated levels of minerals or other constituents above the treatment capability of the City's water recycling facility would be discharged to the sanitary sewer. No discharge of groundwater to surface water or the storm drain system would result. Erosion control Best Management Practices (BMPs) would be required to be implemented during construction to prevent erosion and to protect overall water quality (see Impact "a"). Operation of the proposed municipal groundwater well is not anticipated to conflict with the Basin Plan and impacts would be less than significant.

City of Petaluma General Plan

Petaluma's 2025 General Plan Water Resources Element includes water conservation BMPs and goals and policies for water supply and demand, groundwater supply, and water quality. The Water Resources Element includes the following policies:

– **8-P-19**: Ensure adequate water supply during emergency situations by developing potential groundwater resources and aquifer storage capacity, combined with management of surface water, to meet overall emergency water supply objectives. The city's groundwater resources shall be preserved to meet emergency needs and to offset peak demands.
– **8-P-20**: Manage groundwater as a valuable and limited shared resource by protecting potential groundwater recharge areas and stream sides from urban encroachment within the Petaluma watershed.

– **8-P-21**: Protect groundwater quality from surface contamination by requiring 100-foot sanitary seals on all new municipal water supply wells.

The proposed Project would be consistent with Policy 8-P-19 in that the Project would respond to a need for new municipal groundwater resources within the City's service area to enhance the existing municipal groundwater supplies to ensure adequate water supplies during emergency situations.

As described above, the operation of the proposed municipal groundwater well would be consistent with the Petaluma Valley GSP, as operation of the municipal well is not likely to result in groundwater conditions within the Basin that would result in unreasonable or undesirable results. The groundwater to be pumped from the proposed well would be required to meet MCLs, Title 22 drinking water standards and associated monitoring requirements, and would therefore not violate drinking water standards. Therefore, the Project would not conflict with Policy 8-P-20.

As described in the Project Description, the proposed municipal well would be constructed with a 100-foot sanitary seal in accordance with Policy 8-P-21.

The operation of the proposed municipal groundwater would not conflict with the General Plan, and therefore no impact would result.

c.i) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site? (Less than Significant)

The Project would not require alteration of a creek or other waterbody. Drainage patterns at the Project site would remain essentially the same as they currently exist. The Project would result in only a minor increase in impermeable surfaces associated with the well treatment shed (approximately 250 square feet) and the well vault. Because construction and operation of the Project would not substantially alter drainage patterns or increase runoff, substantial erosion or siltation is not anticipated. The impact would be less than significant.

c.ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (Less than Significant)

Drainage patterns at the Project site would remain essentially the same as they currently exist. Groundwater generated during pump testing and maintenance would be discharged to the local sanitary sewer. No discharge of groundwater to the storm drain system would result. The Project would result in only a minor increase in impermeable surfaces associated with the well treatment shed (250 square feet) and the well vault. Therefore, because the Project would not substantially increase runoff, and flooding is not anticipated, the impact would be less than significant.

c.iii) 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? (Less than Significant)

The Project would result in only a minor increase in impermeable surfaces associated with the well treatment shed (250 square feet) and the well vault. Such an increase would not substantially increase runoff water from the Project site to surrounding stormwater drains. Groundwater generated during pump testing and maintenance of the proposed municipal groundwater well would be discharged to the local sanitary sewer. There are no known sewer capacity issues in the Project area. During well development

and pump testing, the well would discharge to baker tanks and would be metered into the sewer system to ensure capacity issues would not occur. No discharge of groundwater to the storm drain system would result. The Project would not result in runoff water or discharges that would exceed the capacity of the local storm drain system or result in substantial sources of polluted runoff. The impact would be less than significant.

c, iv) Impede or redirect flood flows? (No Impact)

The Project site is not located within a 100-year flood hazard area or within a floodway or other special flood hazard zone (FEMA 2015). Therefore, implementation of the Project would not impede or redirect flood flows. No impact would result.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (No Impact)

The Project site is located in an area designated by the FEMA as Zone X, which is an area of minimal flood hazard (FEMA 2015). The Project site is not located within a tsunami inundation zone as mapped by the California Office of Emergency Services, nor close enough to a waterbody which would be exposed to risks from seiche. Therefore, implementation of the Project would not risk release of pollutants due to inundation. No impact would result.

3.11 Land Use and Planning

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?				✓
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				✓

a) Physically divide an established community? (No Impact)

The Project would include the construction and operation of a new municipal groundwater well, treatment building, and below ground pipelines adjacent to an existing decommissioned above-ground water storage reservoir on City-owned property. The Project would not involve construction of a large physical structure such as a major transportation facility or removal of a primary access route such as a road or bridge. The Project would not impair mobility within the area or between the Project site and surrounding areas. Existing bollards, swing gates, and fencing are in place and would be maintained. The Project components would not physically divide an established community. No impact would result.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? (No Impact)

City of Petaluma General Plan 2025

The Petaluma General Plan land use designation for the Project site is Open Space, while the zoning designation is Open Space and Parks (OSP). The Project would be a public utilities facility located adjacent to an existing water storage reservoir and would be considered an allowable land use under the OSP zoning designation as a use to serve the community.

The Project site is currently developed with existing facilities, and the proposed well and treatment building would be located adjacent to an existing decommissioned above-ground water storage reservoir on a portion of the Project site. The Project would not involve a change of land use at the Project site. Specific land use policies and regulations adopted for the purpose of avoiding or mitigating environmental effects are evaluated in this Initial Study under the corresponding issue areas; for example, policies related to biological resources are evaluated in Section 3.4 of this document. No conflicts with land use plans, policies, or regulations have been identified and no exceptions or reductions to standards would be necessary to approve the Project. Therefore, the Project would not conflict with any applicable requirements adopted for the purpose of avoiding or mitigating an environmental effect. No impact would result.

Petaluma 2020 Urban Water Management Plan

Urban Water Management Plans (UWMPs) are prepared every five years by California's urban water suppliers to support long-term resource planning and ensure adequate water supplies are available to meet existing and future water demands. Every urban water supplier that either provides more than 3,000 acre feet per year or serves more than 3,000 customers is required to assess the reliability of its water sources

over a 20-year planning horizon considering normal, dry, and multiple dry years. The plans are submitted to DWR, which then reviews the submitted plans to ensure they have completed the requirements identified in the UWMP Act.

The City of Petaluma adopted an UWMP in 2016 and most recently updated the UWMP in June 2021 (Petaluma 2021). As summarized in the UWMP, the City produces approximately 5 percent or less of its potable water supply from groundwater wells, and since 2000, groundwater has only been used for supplemental or emergency supply purposes. The UWMP acknowledges that the City is currently in the process of evaluating the groundwater well system for expansion for emergency purposes, peaking usage, and other short-term scenarios. The proposed Project responds to a need for new municipal groundwater well sites within the city's service area to augment and expand its existing system of municipal groundwater supplies to ensure adequate water supplies during emergency situations. No conflict with the UWMP has been identified. No impact would result.

Sonoma County Well Ordinance

Permit Sonoma is the Sonoma County agency responsible for administering permits for water supply wells within Sonoma County, including within the City of Petaluma. The Sonoma County Well Ordinance contains regulations and requirements for constructing wells to prevent groundwater contamination from the surface and between multiple water bearing zones in (County Ordinance 25B). The well-construction standard does not regulate flow volumes or rates, nor does it evaluate water availability or local hydrogeology. As described in the Project Description, the proposed municipal well would be required to adhere to the construction standards outlined in the Sonoma County Well Ordinance, and a permit would be required to be obtained prior to construction and operation of the proposed well. As such, operation of the proposed municipal groundwater well would not be in conflict with the Sonoma County Well Ordinance. No impact would result.

3.12 Mineral Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?				✓

a, b) 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, or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (No Impact)

The Sonoma County Aggregate Resources Management Plan (Sonoma County 2010) identifies aggregate resources of statewide or regional significance (areas classified as MRZ-2 by the State Geologist). The Project site is not located within a designated mineral resource deposit area (Sonoma County 2010), or within an area classified as MRZ-2 in the California Geologic Survey Special Report 205 (CGS 2013). In addition, the Petaluma General Plan does not identify known mineral resources. No impact would result.

3.13 Noise

Would the project:	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		✓		
b) Result in generation of excessive groundborne vibration or noise levels?			✓	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓

a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Less than Significant with Mitigation)

Construction

Petaluma Zoning Code Section 21.040 restricts noise-generating activities at construction sites to the hours between 7:00 a.m. and 10:00 p.m., Monday through Friday and 9:00 a.m. to 10:00 p.m. on Saturday, Sunday and State, Federal or Local Holidays. Project construction is expected to last approximately eight to ten weeks, and construction activities are intended to take place within the hours defined in the Petaluma Zoning Code as described above. However, given the nature of production well drilling, it is possible that problems could arise and require temporary continuous operation of the drilling equipment to eliminate a risk of the borehole caving. Therefore, it is possible that during well installation, the operation of the drilling equipment could extend beyond the hours defined by the Petaluma Zoning Code to eliminate the risk of a borehole collapse. Based on the type and extent of work to be performed, it is conservatively assumed that construction could potentially require work beyond the hours defined by the Petaluma Zoning Code for up to two nighttime periods. The potential impact of construction noise associated with construction outside of Petaluma's allowable hours is considered significant. Implementation of Mitigation Measure NOI-1, presented below, would reduce the construction-phase noise impact to a less-than-significant level. The nearest noise sensitive land uses would be residences located between 100 and 150 feet from construction activities, as well as visitors of Oak Hill Park located between 100 and 500 feet from construction activities. An existing playground within Oak Hill Park is located approximately 250 feet from proposed areas of construction activity.

Project construction activities would temporarily increase noise levels at the adjacent residential receivers and at locations within Oak Hill Park. Construction noise levels would vary on a day-to-day basis and would be sporadic rather than continuous in nature, as different types of construction equipment would be used

throughout the construction process. Most construction noise would be within the range of 80 to 90 dBA Lmax at a distance of 50 feet from the source. Noise levels drop off at a rate of about 6 dBA per doubling of distance between the noise source and receptor, and therefore would range from 74 to 84 dBA at the closest residence. Typically, significant noise impacts do not result when standard construction noise control measures are enforced at a project site and when the duration of the noise generating construction period is limited to one construction season (typically one year) or less. However, given the adjacent sensitive land uses, including recreational uses within Oak Hill Park, the impact of temporary daytime construction noise is considered significant. Implementation of Mitigation Measure NOI-1, presented below, would reduce the temporary construction-phase noise impact to a less-than-significant level.

Operation

Petaluma Zoning Code Section 21.040 establishes maximum exterior noise exposure limits for stationary operational noise sources to protect the public from disturbance caused by unnecessary or excessive noise. The basic noise limit ranges from 65 to a maximum of 75 dBA Leq depending on the applicable time period identified in Table 21.1 of the Zoning Code. Operational noise from the well facility would be negligible and well below 65 dBA Leq, as the well pump would be submersed in water below ground, and associated appurtenances would contribute minimally to overall noise generation. A backup generator would only be used if power was lost and the City needed to continue utilizing the well until power was restored. Typical noise levels associated with a backup generator would be approximately 78 dBA Leq at 50 feet from the source. The rate of attenuation (i.e. reduction) is approximately 6 dBA for every doubling of distance from a point source. At the nearest residences, noise levels from operation of an emergency generator would be approximately 70 to 72 dBA Leq. In such instances, operation of a backup generator would be considered a necessity and in the interest of public health and safety, and the City would issue a permit for exemption of noise requirements given that the period of operations would be temporary and would not exceed 10 working days in length (per Zoning Code Section 21.040 A.3.b). Noise from periodic truck trips during maintenance visits would be similar to existing vehicle noises along the neighboring streets and also would be negligible due to the infrequency and short duration of the visits. The operational noise impact would be less than significant.

Mitigation Measure

Implementation of Mitigation Measure NOI-1 would reduce potential impacts relative to construction noise levels to a less-than-significant level by requiring implementation of best management practices and compliance with applicable local requirements.

Mitigation Measure NOI-1: Reduce Construction Noise Levels

The City and its contractor shall implement appropriate Best Management Practices to reduce construction noise levels emanating from construction activities and minimize disruption and annoyance at existing noise-sensitive receptors in the project vicinity. A detailed construction plan shall be developed identifying the schedule for major noise-generating construction activities and procedures for coordination with the owner/occupants of nearby noise sensitive residential and recreational land uses so that construction activities can be scheduled to minimize noise disturbance. Best Management Practices may include, but would not be limited to, the following:

- To the extent feasible, construction activities shall be limited to 12-hour shifts between 7:00 a.m. and 7:00 p.m. Continuous 24-hour construction activities shall only be allowed during the drilling, construction, gravel packing, and sealing of the production well, if necessary to ensure the integrity of the well. The Contractor shall arrange with the Engineer for any 24-hour

operations intended and/or required for the successful completion of the Project. Together, the Contractor and the Engineer shall practice good neighbor relations at all times.

- Night-time drilling operations, if required, shall be conducted in a manner to reduce noise peaks and avoid rapid changes in noise levels. Drilling personnel shall be advised to avoid noise generation wherever possible. In particular, the changing of drill pipe and the throttling of the drill rig shall be done in such a manner that appreciably lessens the noise produced by these activities as compared to the daytime.
- Construction noise levels measured by the Contractor at the nearest sensitive receptor shall not exceed 60 dBA without prior written approval of the City. Should noise levels exceed the above levels, appropriate noise attenuation measures shall be implemented prior to resuming work, to reduce the offensive noise levels at the sensitive receptors.
- Portable generators shall have enclosures, exhaust silencers, and rated at no more than 75 dBA at 25 feet and 60 dBA at the nearest receptor.
- A "disturbance coordinator" shall be designated who will be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem. A publicly visible sign shall be posted with the telephone number and person to contact at the City regarding noise complaints. This person shall respond and take corrective action within 48 hours.
- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Idling times shall be minimized by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations).
- Locate stationary noise generating equipment (e.g., compressors) as far as possible from adjacent residential receivers.
- Acoustically shield stationary equipment located near residential receivers with temporary noise barriers.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.

b) Result in generation of excessive groundborne vibration or noise levels? (Less than Significant)

Vibration from the construction equipment can result in effects ranging from annoyance of people to damage of structures. Vibration amplitudes decrease with increasing distance as the energy dissipates. The California Department of Transportation (Caltrans) recommends a vibration limit of 0.5 in/sec Peak Particle Velocity (PPV) for groundborne vibration adjacent to new residential and modern commercial/industrial structures, 0.3 in/sec PPV for older residential structures, and 0.12 in/sec PPV for historical buildings that are documented to be structurally weakened. For the purposes of this analysis, groundborne vibration levels exceeding the conservative 0.3 in/sec PPV limit have been selected as the significance threshold for a vibration impact, as there are no known historical buildings adjacent to the Project construction area.

No pile driving, an activity typically associated with high levels of groundborne vibration, would be required for construction of the Project. At a distance of 25 feet, typical construction equipment, excluding pile-drivers, would cause vibration levels up to 0.21 in/sec PPV. No structures sensitive to groundborne vibration are located within 25 feet of the construction area. Therefore, the anticipated vibration levels would not exceed the 0.3 in/sec PPV limit, as the closest residence is 100 feet from the construction activities. In addition, given the distance, the levels of vibration at the location of off-site residential and recreational land uses would be at levels that are considered barely perceptible (less than or equal to 0.01 PPV). Impacts related to groundborne vibration or groundborne noise levels would be less than significant.

Following construction, operation of the Project would not result in sources of groundborne vibration or groundborne noise. The well pump would be submersed below ground and mounted so as to prevent vibration, and no other components of the well facility would generate vibration. A backup generator would only be used if power was lost and the City needed to continue utilizing the well until power was restored. In such instances, a generator would be located and mounted on a pad next to the treatment shed. Such generators are not identified as a substantial source of groundborne vibration, and operation would be infrequent and temporary in nature. The operational impact would be less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (No Impact)

The Project site is not located within two miles of a public use airport or a private airstrip covered by the Sonoma County Airport Comprehensive Land Use Plan. The nearest airport, Petaluma Municipal Airport, is located approximately 2.75 miles east of the Project site. No impact would result.

3.14 Population and Housing

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Induce substantial unplanned 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 people or housing, necessitating the construction of replacement housing elsewhere?				✓

a) Induce substantial unplanned 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)? (Less than Significant)

The Project does not include the construction of new homes or businesses in the area or extend new roads or other infrastructure into undeveloped areas. The Project is intended to offset the City's need for purchased water from Sonoma Water and would not induce population growth directly or indirectly. Given the modest level of construction required for the Project, it is reasonable to anticipate that workforce requirements for construction can be met through the local labor force within the region. Long-term operation and maintenance of the proposed municipal groundwater well would be performed by existing Petaluma staff. The impact would be less than significant.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (No Impact)

Implementation of the Project would not displace existing housing units or residents. The construction of replacement housing would not be necessary. No impact would result.

3.15 Public Services

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 public services:				
Fire Protection?				✓
Police protection?				✓
Schools?				✓
Parks?				✓
Other public facilities?				✓

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 public services? (No Impact)

As discussed in Section 3.14, Population and Housing, implementation of the Project would not induce population growth and, therefore, would not require expanded fire or police protection facilities to maintain acceptable service ratios, response times, or other performance objectives. The Project is intended to offset the City's need for purchased water from Sonoma Water and would not induce population growth directly or indirectly. The Project would not result in an increase in student population, and therefore, no new or expanded schools would be required. The Project would not result in the increased use of Oak Hill Park or other existing parks or public facilities as it would not induce population growth. The Project would not require the expansion of recreational facilities to maintain acceptable service ratios in parks and would not require the expansion of other public facilities. No impact on public services would result.

3.16 Recreation

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			✓	
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?				✓

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (Less than Significant)

The Project site is located adjacent to Oak Hill Park, with access provided through the park and off-site utility improvements temporarily disturbing areas within Oak Hill Park. Oak Hill Park includes a children's playground, picnic areas, basketball court, pétanque court, a community labyrinth, dog park area, public restroom, and wooded and lawned open space areas and walking trails. The community labyrinth located in the vicinity of the proposed municipal groundwater well would be avoided by construction activities to prevent damage to the resource.

As discussed in Section 3.14, Population and Housing, implementation of the Project would not induce population growth, and therefore would not increase the use of existing recreational facilities, including the adjacent Oak Hill Park. The Project would include the operation of a municipal groundwater well to offset the City's need for purchased water from Sonoma Water and would not generate new residential or employee population. Because the Project would not increase the existing population or housing supply in the City, no increased use of parks and other recreational resources would occur that would result in physical deterioration or accelerated deterioration of existing recreational resources.

While additional use, and associated deterioration, would not occur as a result of the Project, potential deterioration to the Park during construction is evaluated. An existing access and maintenance road to the City's water storage reservoir at the Project site would be used for construction traffic during construction, and installation of underground pipelines and electrical utility connections would be installed within the access road and within a portion of the Oak Hill Park parking lot. Construction of the proposed electrical line across a portion of the paved Oak Hill Park parking lot would be completed within an approximately one-week period. Following construction, the new electrical line within Oak Hill Park would be located below ground, and existing conditions along the temporarily impacted parking lot would be restored to pre-existing conditions. Similarly, areas disturbed throughout the Project site during construction would be restored to pre-construction conditions. The community labyrinth located in the vicinity of the proposed municipal groundwater well would be avoided with protective fencing to be installed during construction activities to prevent damage to the resource. The proposed well treatment shed would be located within a small area adjacent to the City's existing water storage reservoir. The small footprint and location of the

proposed well and treatment shed would not substantially alter recreational use. The impact to Oak Hill Park would be less than significant.

b) Include or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? (No Impact)

The Project does not propose recreational facilities and would not require construction or expansion of recreational facilities that might have an adverse physical effect on the environment. No impact would result.

3.17 Transportation

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			✓	
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			✓	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?		✓		
d) Result in inadequate emergency access?				✓

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (Less than Significant)

Project construction activities would result in a short-term increase in construction-related vehicle trips on local roadways, including Bodega Avenue, Park Avenue and within the Oak Hill Park parking lot. It is anticipated that the peak number of daily truck trips during construction would be 12 round trips (6 haul truck trips and 6 construction crew trips). Construction activity would last approximately 8 to 10 weeks. Due to the infrequency of truck traffic and the relatively short duration of construction, Project construction is not anticipated to conflict with plans, policies or programs related to the effectiveness of the City's circulation system. Please see impact "c" below for an evaluation of construction-related impacts as it relates to a potential hazard.

Operation and maintenance of the proposed well facility would generally require one maintenance visit per day by City staff when the well is operating, and monthly visits when the well is not in operation. Truck trips during operation and maintenance would be limited to a single trip in and out of the well facility site via an existing access road connecting to Park Avenue. Such trips would be combined with routine maintenance trips to the water storage reservoir and Oak Hill Park, further minimizing energy related to maintenance of the Project. Due to the infrequency of maintenance trips, Project operation is not anticipated to conflict with plans, policies or programs related to the effectiveness of the City's circulation system. No transit, roadway, bicycle, or pedestrian facilities would be affected. Therefore, the operational impact would be less than significant.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? (Less than Significant)

CEQA Guidelines section 15064.3 (Determining the Significance of Transportation Impacts) specifies that Vehicle Miles Travelled (VMT) is the primary metric or measure of effectiveness for determining the significance of transportation impacts across California. VMT refers to the amount and distance of automobile travel attributable to a project. The City of Petaluma's *Senate Bill 743 Vehicle Miles Traveled Implementation Guidelines* (Petaluma 2021d) contains thresholds for VMT evaluation, which is used to evaluate impacts in this Initial Study. Construction traffic is not considered a feature of a project and is

temporary, therefore construction traffic is not required to be considered in the analysis. Operation and maintenance of the proposed municipal groundwater well would generally require one maintenance visit per day by City staff when the well was operating, and monthly visits when the well was not in operation. Such trips would be combined with routine maintenance trips to the water storage reservoir and Oak Hill Park, further minimizing energy related to maintenance of the Project.

Petaluma's VMT Implementation Guidelines does not include specific screening criteria for utility projects similar to the proposed Project. However, both Petaluma's VMT Implementation Guidelines and the Office of Planning and Research's *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR 2018) include an assumption that projects that generate or attract fewer than 110 trips per day may be assumed to cause a less-than-significant transportation impact. When one considers the screening criteria established for Land Use Projects, it is reasonable to acknowledge that the trips associated with operation and maintenance of the Project (1 trip per day) would be substantially less than the screening criteria for a Land Use Project (110 trips per day). The Project would not conflict with or be inconsistent with an applicable threshold of significance adopted per CEQA Guidelines section 15064.3, subdivision (b). The impact would be less than significant.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (Less than Significant with Mitigation)

Project construction activities would not require a roadway closure and would not prevent public access to Oak Hill Park. An existing access and maintenance road at the Project site would be used during construction, and underground sewer and electrical connections would be installed within the access road and within a portion of the Oak Hill Park parking lot and Park Avenue.

Construction of the proposed electrical line across a portion of the paved Oak Hill Park parking lot would be completed within an approximately one-week period. Similarly, completion of a sanitary sewer line connection within Park Avenue would be completed within an approximately one-week period. During installation of the electrical line and the sanitary sewer connection, the presence of construction equipment would temporarily alter the functionality and safety of the roadway and parking lot for park users, pedestrians, and bicyclists in the immediate area. The temporary construction-phase impact would be significant. Implementation of Mitigation Measure TR-1 (Minimize Traffic and Parking Disruption) would reduce the impact relative to construction traffic within and access to Oak Hill Park to a less-than-significant level.

Following construction, the Project would not include components that would affect the City's circulation system. The Project would not alter the existing alignment of Park Avenue, the existing access road to the well site, or the parking lot within Oak Hill Park. Operation and maintenance of the well facility would generally require one maintenance visit per day by City staff when the well was operating, and monthly visits when the well was not in operation. Truck trips during operation and maintenance would be limited to a single trip in and out of the well facility site via an existing access road connecting to Park Avenue. Due to the infrequency of maintenance trips, Project operation is not anticipated to result in incompatible uses. The operational impact would be less than significant.

Mitigation Measure

Implementation of Mitigation Measure TR-1 would reduce potential impacts relative to construction traffic and access within Oak Hill Park and Park Avenue to a less-than-significant level by requiring implementation of access and traffic controls.

Mitigation Measure NOI-1: Minimize Traffic and Parking Disruption

The City and its contractor shall implement traffic controls to reduce traffic conflicts within Oak Hill Park and Park Avenue during construction to minimize disruption. A traffic control plan shall be prepared for City review and approval prior to construction. During construction, at least one lane in each direction of the Oak Hill Park parking lot and Park Avenue shall be kept open at all times. Through traffic shall be maintained at all times (e.g. through temporary signals, flaggers or other means). Bicycle and pedestrian access shall be maintained at all times, using short signed detours around the construction zone if necessary. Advance notification of construction work to the community and stakeholders shall be conducted to provide notice of work within Oak Hill Park and Park Avenue. All road and parking configurations shall be restored to pre-project conditions.

d) Result in inadequate emergency access? (No Impact)

The Project would not include components that would affect emergency access. The Project would not alter Park Avenue, the existing access road to the proposed well site, or the parking lot within Oak Hill Park. No operational impact would result.

Refer to Impact “c” above, with regard to temporary construction-phase impacts related to potential increase in hazards or incompatible use.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k)?		✓		
b) Cause a substantial adverse change in the significance of a tribal cultural resource that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.		✓		

a, b) Cause a substantial adverse change in the significance of a tribal cultural resource? (Less than Significant with Mitigation)

CEQA requires lead agencies to determine if a project would have a significant effect on tribal cultural resources. The CEQA Guidelines define tribal cultural resources as: (1) a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American Tribe that is listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or (2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code Section 5024.1(c), and considering the significance of the resource to a California Native American tribe.

Efforts to identify tribal cultural resources that could be affected by the Project included notification to appropriate local Native American Tribes, and a sacred lands search through the Native American Heritage Commission (NAHC). The search of the NAHC's Sacred Lands File did not indicate the presence of Native American cultural resources in the Project area.

On July 20, 2021, the City of Petaluma sent the Federated Indians of Graton Rancheria a tribal consultation invitation pursuant to Public Resources Code section 21080.3.1. A 30-day period allowing for a request for consultation ended with no request made for consultation. California Native American tribes also were notified of the Project on July 7, 2021 during completion of the Archaeological Resources Study for the Project. Letters were sent to the Federated Indians of Graton Rancheria, Lytton Rancheria, Cloverdale Rancheria of Pomo Indians, Dry Creek Rancheria of Pomo Indians, Guidiville Indian Rancheria, Middletown Rancheria of Pomo Indians, Mishewal-Wappo Tribe of Alexander Valley, and Pinoleville Pomo Nation. On August 5th, a representative of Lytton Rancheria responded to the notification and stated that the Tribe

believes the Project site falls within traditional Pomo territory and therefore a potential for finding tribal cultural resources exists on the site. No other response was received.

Based on the response from Lytton Rancheria, the possibility of encountering tribal cultural resources cannot be discounted. Therefore, if tribal cultural resources are encountered during construction, a potentially significant impact could occur. Implementation of Mitigation Measures TCR-1, CUL-1, and CUL-2 would reduce the potential impact on tribal cultural resources to a less-than-significant level.

Following construction, Project operation would not include ground disturbing activities. Therefore, the operational impact would be less than significant.

Mitigation Measure

Implementation of Mitigation Measures TCR-1, CUL-1, and CUL-2 would reduce the potential impact to tribal cultural resources to a less-than-significant level through archaeological monitoring and by outlining procedures to be taken in the event of inadvertent discovery of such resources consistent with appropriate laws and requirements. Please refer to Section 3.5, Cultural Resources, for a description of Mitigation Measures CUL-1 and CUL-2.

Mitigation Measure TCR-1: Protect Tribal Cultural Resources during Construction Activities

In the event that any subsurface features or deposits are discovered during construction, ground-disturbing activity in the vicinity of the resource shall be halted. The appropriate tribal representative(s) from Lytton Rancheria and Federated Indians of Graton Rancheria shall be notified, and a Native American monitor and a qualified professional archaeologist shall be retained to evaluate the find. If the find qualifies as a tribal cultural resource as defined by CEQA, the City shall ensure that appropriate actions to protect the resource are taken and that no additional resources are affected.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			✓	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				✓
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			✓	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			✓	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				✓

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (Less than Significant)

The Project itself is construction and operation of a groundwater production well and associated facilities at the Project site, including installation of pipelines to connect the new well to the City's water distribution system and sanitary sewer system. The Project would require installation of a new underground electrical power line. The potential environmental impacts associated with construction of the proposed utilities are evaluated as part of this Initial Study. No significant impacts have been identified in relation to the new electrical power connection. No additional utility relocations or construction of additional off-site utilities beyond those identified as part of the Project would be required.

During well construction, zone sampling would occur to determine water quality. Groundwater generated during development, pump testing, and maintenance of the proposed municipal groundwater well would be discharged to the local sanitary sewer. There are no known sewer capacity issues in the Project area. As described in Section 1.4, Project Description, such groundwater would be pumped to portable storage tanks and then released to the sanitary sewer at a discharge rate that would not exceed the capacity of the local sanitary sewer system. No groundwater containing elevated levels of minerals or other constituents above the treatment capability of the City's water recycling facility would be discharged to the sanitary sewer. The

discharge of groundwater to the sanitary sewer system and the local wastewater treatment plant would be periodic and would not alter existing wastewater characteristics or result in the need for new treatment methods. Therefore, there would be no need to expand wastewater facilities.

Drainage patterns at the Project site would remain essentially the same as they currently exist. No discharge of groundwater to surface waters or the storm drain system would result. The Project would result in a very small increase in impermeable surfaces associated with the well treatment shed (approximately 250 square feet). Because the Project would not substantially increase storm water runoff or impervious surfaces, the Project would not require expanded storm water drainage.

The Project would not require new or expanded natural gas or telecommunications facilities.

The impact would be less than significant.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? (No Impact)

The Project would provide water supplies, it would not create a demand for water. The Project is intended to increase the reliability and diversity of Petaluma's water supplies, helping offset the City's need for purchased water from Sonoma Water. No impact would result.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (Less than Significant)

Groundwater generated during development, pump testing, and maintenance of the proposed well would be discharged to the local sanitary sewer. The discharge of groundwater to the sanitary sewer system and subsequent conveyance to the Ellis Creek Water Recycling Facility would be periodic and would not alter existing wastewater characteristics or result in the need for new treatment methods. No groundwater containing elevated levels of minerals or other constituents above the treatment capability of the City's water recycling facility would be discharged to the sanitary sewer. Therefore, there would be no need to alter or expand wastewater facilities. The impact would be less than significant.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? (Less than Significant)

Soil excavated during construction of the proposed groundwater well and associated utilities would be used for backfill or would be hauled off-site for re-use or disposal as required by City regulations. Materials that could not be reused or composted would be disposed of at regional landfills, such as the Central Landfill in Petaluma (anticipated to have remaining capacity until 2034) or the Redwood Landfill in Novato (anticipated to have capacity through 2024). Sufficient capacity also exists at multiple additional regional landfills. Due to the minimal solid waste disposal needs and the availability of landfills with capacity to accept such wastes, the temporary construction-phase impact would be less than significant.

Following construction, operation of the Project would not require routine disposal of solid waste. No operational impact would result.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (No Impact)

The Sonoma County Waste Management Agency implements regional waste diversion programs as required by Assembly Bill AB 939. The proposed diversion of recyclable and compostable waste during Project construction would be consistent with regional waste diversion goals. Following construction, operation of the Project would not require routine disposal of solid waste. No conflict with statutes and regulations related to solid waste have been identified. Therefore, no impact would result.

3.20 Wildfire

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
If located in or near State Responsibility Areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				✓
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				✓
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				✓
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes?				✓

a - d) If located in or near State Responsibility Areas or lands classified as very high fire hazard severity zones, would the project impair an adopted emergency response plan or emergency evacuation plan, exacerbate wildfire risk, or expose people or structures to significant risks? (No Impact)

The Project site and off-site improvement areas are not located in or contiguous to State Responsibility Area (SRA) lands. The Project site is located approximately 0.5 mile east of the nearest SRA located near Bantam Way. The Project site is located more than 12 miles west of the nearest lands classified as a very high fire hazard severity zone (CalFire 2007). Therefore, the CEQA Guidelines Appendix G Checklist section for wildfire is not applicable to the Project. No impact would result.

For informational purposes, the following additional wildfire evaluation is provided.

The Project site and off-site improvement areas are not located within the established boundaries of a high fire hazard zone, as illustrated in the City's High Fire Hazard Severity Zone map (Petaluma 2007). The Project site and off-site improvement areas are located in a Local Responsibility Area (LRA), which is an area where a local agency, in this case the City of Petaluma, has primary responsibility for fire and emergency response. Per law, only lands zoned as Very High Fire Hazard Severity are identified within LRAs. The Project site is not located within such an area.

No roadway closures would occur during construction or operation of the Project. The Project would not result in on-street worker parking or substantial equipment staging or otherwise affect emergency services or response times in the area. The Project would not change the existing off-site street network, circulation patterns or effect emergency response routes. The Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan (see Impact "f" in Section 3.9 of this Initial Study).

As described in impact “a.iv” in Section 3.7, Geology and Soils, the risk associated with landslides in the Project area would be less than significant. The Project would tie into existing Petaluma and PG&E utilities. Electrical and telecommunication infrastructure would be located underground and would tie-in to existing infrastructure. The proposed Project consists of typical water-system infrastructure, and any increase in fire risk as a result of maintenance would be minimal.

The proposed municipal well would be connected to the City’s water distribution system and fire hydrants and would provide added water pressure to the local system. In addition, the well house would have bypass piping which could be connected to fire hoses if needed.

For an analysis of the potential to expose people or structures to a significant risk of loss, injury or death involving wildland fires resulting from construction see Section 3.9, Hazards and Hazardous Materials.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Does the project:				
a) Have the potential to substantially 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, substantially 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 are 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 which would cause substantial adverse effects on human beings, either directly or indirectly?		✓		

a) Does the project have the potential to substantially 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, substantially 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? (Less than Significant with Mitigation)

Potential Project impacts to biological and cultural resources are addressed in Section 3.4, Biological Resources, Section 3.5, Cultural Resources, and Section 3.18, Tribal Cultural Resources, respectively. With implementation of the recommended mitigation measures identified in this Initial Study, the potential for Project-related activities to degrade the quality of the environment, including wildlife species or their habitat, plant or animal communities, or important examples of California history or prehistory would be reduced to less-than-significant levels.

b) Does the project have impacts that are 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)? (Less than Significant)

Cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

This cumulative impact analysis uses the list approach. Efforts to identify cumulative projects included review of proposed major developments within the City of Petaluma, including commercial, mixed use, residential projects, and review of the Petaluma Capital Improvement Program. Projects identified and considered for cumulative impacts include:

– Potential future improvements to the existing water storage reservoir near the Project site;
– Planned multi-family residential project consisting of three units at 136 Court Street, 0.4 mile east of the Project site;
– Planned mixed-use development including 1,500 sf commercial and 10 residential units at 131 Liberty Street, 0.4 miles east of the Project site;
– Planned upgrades to water and sewer main infrastructure near McNear Park, located approximately one mile southeast of the Project site;
– Ongoing roadway and utility improvements along Petaluma Boulevard South, including replacement of water mains, within 0.6 mile east of the Project site; and
– Planned pavement rehabilitation along Oak Street, Keokuk Street, and Washington Street, between 0.1 and 0.4 miles east and southeast of the Project site.

As summarized in this Initial Study, the Project would not result in impacts on agriculture and forestry resources, mineral resources, land use and planning, public services, or wildfire. Therefore, implementation of the Project would not contribute to any related cumulative impact on those resources.

Based on current schedules, the construction of the water storage reservoir cumulative Project would not overlap with the Project construction. Therefore, the Project impacts summarized in this Initial Study would not add appreciably to any existing or foreseeable future significant cumulative impact.

The distance between the Project site and the identified cumulative projects along Court Street, Liberty Street, Petaluma Boulevard South, Oak Street, Keokuk Street, and Washington Street would prevent the potential for cumulative impacts in the related to aesthetics, air quality, biological resources, cultural resources, noise, traffic and other environmental topics. None of the cumulative projects are located adjacent to the Project site or the affected Project roadways. Given the distance and dissimilarity between the Project site and the identified cumulative projects, the Project impacts summarized in this Initial Study would not add appreciably to any existing or foreseeable future significant cumulative impact. The impacts of the proposed Project would be mitigated to a less-than-significant level. Incremental impacts, if any, would be very small, and the cumulative impact would be less than significant.

c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly? (Less than Significant with Mitigation)

With implementation of the recommended mitigation measures identified in this Initial Study, the potential for Project-related activities to cause substantial adverse effects on human beings would be reduced to less-than-significant levels.

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