

SANTA ROSA GROUNDWATER MASTER PLAN

Final Mitigated Negative Declaration

Prepared for:



City of Santa Rosa Utilities Department
69 Stony Circle
Santa Rosa, CA 95401

Prepared By:



GHD Inc.
2253 Mercury Way, Suite 150
Santa Rosa, CA 95407

State Clearinghouse Number: 2013122027

September 11, 2013

Table of Contents

1.	Mitigated Negative Declaration.....	1
1.1	Project Location	1
1.2	Project Description	1
1.3	Finding of No Significant Effect on the Environment	2
1.4	Initial Study/Proposed Mitigated Negative Declaration Public Circulation Period	2
1.5	Staff-initiated Changes.....	2
1.6	Response to Comments on the Initial Study.....	4
1.7	Location of Documents	4
1.8	Mitigation Measures	4
2.	Response to Agency and Public Comments	21
3.	Preparers.....	47

Appendices

Appendix A – Initial Study/Proposed Mitigated Negative Declaration

Appendix B – Mitigation Monitoring Program

1. Mitigated Negative Declaration

Project Title	Santa Rosa Groundwater Master Plan
Lead Agency Name & Address	City of Santa Rosa Utilities Department 69 Stony Circle Santa Rosa, CA 95401
Contact Person & Information	Jennifer Burke Deputy Director, Environmental Services Telephone number: (707) 543-3359 Email: jburke@srcity.org
Project Sponsor's Name & Address	City of Santa Rosa Utilities Department 69 Stony Circle Santa Rosa, CA 95401

1.1 Project Location

The project is located in Santa Rosa, California. The City of Santa Rosa (City) is located approximately 50 miles north of San Francisco in central Sonoma County. The Project encompasses the City's Urban Growth Boundary. The City's Urban Growth Boundary overlies portions of two groundwater basins: 1) the Santa Rosa Valley Groundwater Basin (including the Santa Rosa Plain Sub-basin and the Rincon Valley Sub-basin); and 2) the Kenwood Valley Groundwater Basin.

1.2 Project Description

The City of Santa Rosa Groundwater Master Plan would establish policies and strategies to manage the available groundwater resources in a sustainable manner for potential future beneficial uses. The overall objective of the Groundwater Master Plan is to provide a strategic road map for the City's Utilities staff, Board of Public Utilities (BPU), and City Council of how available groundwater resources could be most effectively used to meet the needs of the City's existing and future customers.

The Groundwater Master Plan responds to the City's emergency water supply needs in the event of a loss of supply from the Sonoma County Water Agency (SCWA) or from an earthquake or other major emergency supply outage event. The evaluation identifies the City's potential emergency water supply needs under various SCWA supply outage scenarios to determine the need for and location of emergency groundwater supply wells within the City's water service area. The emergency scenarios were developed to evaluate both a full and partial loss of the SCWA supply under existing and buildout demand conditions, for both a short-term (2 day) and long-term (14 day) outage duration. Based on the results of the evaluation, the Groundwater Master Plan would recommend the development of an additional 8.4 mgd of emergency groundwater capacity to provide a total of 12.7 mgd when combined with the City's existing emergency groundwater supplies. The Groundwater Master Plan includes policies and actions to provide direction on the City's future emergency groundwater use and management, as

well as specific projects and programs to be implemented over a 15-year period to meet the needs of the City's emergency water supply needs.

1.3 Finding of No Significant Effect on the Environment

The project impacts would be mitigated to a less-than-significant level through implementation of mitigation measures or through compliance with existing Municipal Code requirements or City standards. With the recommended mitigation measures, no significant adverse effects to the environment are expected from the project. This project would not have a detrimental effect upon either short-term or long-term environmental goals. This project would not have impacts which are individually limited but cumulatively considerable. This project would not have environmental impacts which will cause substantial adverse effects upon human beings, either directly or indirectly.

1.4 Initial Study/Proposed Mitigated Negative Declaration Public Circulation Period

An Initial Study/Proposed Mitigated Negative Declaration (IS/Proposed MND) was prepared for the project and sent to the State Clearinghouse and interested agencies on July 22, 2013 for a 31-day public review period. The IS/Proposed MND is included in Appendix A.

1.5 Staff-initiated Changes

The following changes were made by City staff to correct errors in the IS/Proposed MND. Where revisions to the main text are called for, the page and paragraph are set forth, followed by the appropriate revision. Added text is indicated with underlined text. Deletions to text in the IS/Proposed MND are shown with ~~striketrough~~ text.

The following revisions have been made to the first and second paragraphs on page 72 of the IS/Proposed MND to correct the mitigation numbering.

Mitigation Measure HYD-1a: Management of Well Development and Pump Testing Discharges

During well development and pump testing, if discharging to a local surface water or storm drain, the City shall first obtain coverage under North Coast Regional Water Quality Control Board Order No. R1-2009-0045, Waste Discharge Requirements for Low Threat Discharges to Surface Waters in the North Coast Region. The City shall submit permit registration documents to the North Coast Regional Water Quality Control Board, including development of a Best Management Practices/Pollution Prevention Plan to characterize the discharge and to identify specific measures to control the discharge, such as sediment controls to ensure that excessive sediment is not discharged, and flow controls to prevent erosion and flooding downstream of the discharge. The City shall ensure that the Contractor oversees implementation of the Best Management Practices/Pollution Prevention Plan during well development and pump testing activities, including visual inspections and ensuring overall compliance.

Mitigation Measure HYD-1a would reduce water quality impacts from dewatering discharges by requiring the City and construction contractor to prepare and implement a Best Management Practices/Pollution Prevent Plan that specifies how groundwater would be managed during well development and pump testing to protect water quality. Implementation of Mitigation Measure

HYD-1a would ensure that such discharges to the storm drain system would be compliant with applicable Waste Discharge Requirements. The impact following mitigation would be less than significant.

The following revisions have been made to the first and third paragraphs on page 72 of the IS/Proposed MND to correct the mitigation numbering.

Mitigation Measure HYD-1b: Locate Emergency Wells to Protect Groundwater Quality

Where the City identifies a potential emergency well site within 1,000 feet of a known area of soil or groundwater contamination, the City shall retain a certified hydrogeologist or professional geologist to evaluate the contamination site(s) to determine the nature and status of the contamination and to evaluate the potential water quality impacts from emergency pumping. The hydrogeologist or geologist shall review records from the North Coast Regional Water Quality Control Board and other databases with relevant contamination information. If a known site is identified as "Closed", "Not Active", or "No Remediation Required" then the City can install the emergency well without further evaluation of potential groundwater impacts.

If open cases are identified within 1,000 feet of the proposed well site, the City's hydrogeologist or geologist shall prepare a Drinking Water Source Assessment according to the Program outlined by the California Department of Public Health. In accordance with the Department's policies, if the Assessment indicates a vulnerability score of 7 or less, the well may proceed at that location. If the vulnerability score is 8 or more, then the well site must be relocated.

Mitigation Measure HYD-1b would reduce impacts from operation of an emergency well near contaminated groundwater to less-than-significant levels by placement of the well in an area greater than 1,000 feet from known groundwater contamination, or through placement of emergency wells in areas closer to known groundwater contamination only when a Drinking Water Source Assessment shows that placement and operation would not impact groundwater quality or the City's ability to deliver groundwater that meets potable drinking water standards.

The following revisions have been made to the discussion on the American Badger and Mitigation Measure BIO-1i on page 46 of the IS/Proposed MND to reflect the new name of the California Department of Fish and Wildlife (formerly California Department of Fish and Game).

American Badger

The American badger is listed as a state species of special concern by CDFG~~W~~. Construction could impact this species if burrows were encountered during ground-disturbing activities. Impacts to this species could be significant.

Mitigation Measure BIO-1i: Minimize Impacts to American Badger

The City shall ensure that a qualified biologist conduct a pre-construction survey for badger burrows for disturbance in annual grasslands. In the event that a badger burrow is identified within the limits of construction prior to ground-disturbing construction activities (e.g., grading, excavation, trenching), CDFW shall be contacted to determine if any setback requirements would be needed during construction or if active trapping and relocation is an option. If a suspected badger burrow is identified during construction,

construction shall temporarily cease in the immediate area, until the CDFW has been contacted. The City shall relocate any badgers as directed by CDFGW.

Similarly, on page 42 of the IS/Proposed MND, Mitigation Measure BIO-1c, California red-legged frog, fourth bullet, is revised as follows:

- If CRLF are found, then the USFWS and CDFGW shall be notified immediately, and instructions from the USFWS will be followed.

1.6 Response to Comments on the Initial Study

Letters and/or emails were received from four agencies and two organizations during the comment period: 1) California State Clearinghouse; 2) Colorado River Board of California; 3) State Water Resources Control Board; 4) California Department of Transportation; 5) Dry Creek Rancheria Band of Pomo Indians, and; 6) Federated Indians of Graton Rancheria. The City of Santa Rosa must consider the comments received during the comment period prior to adopting a Mitigated Negative Declaration. Responses to the comments received are included in Section 2, Response to Agency and Public Comments. The comments resulted in modifications to Mitigation Measures CR-2 and CR-3, which have been revised in a manner which is more effective than previously written (refer to Response to Comment 8-3 and 8-4).

1.7 Location of Documents

Copies of this document and supporting references are available for review at the following City of Santa Rosa offices: Laguna Treatment Plant, 4300 Llano Road, Santa Rosa, CA 95407, and City Manager's Office, 100 Santa Rosa Avenue, Santa Rosa, CA 95404. The MND is also available on the City's website at <http://srcity.org/gwmp>.

1.8 Mitigation Measures

The following mitigation measures have been added to the project, have been agreed to by the City, and have been found to reduce potentially significant impacts of the proposed project to less than significant. A Mitigation Monitoring Program has been prepared and is available in Appendix B.

Mitigation Measure AES-1: Emergency Well Siting Near State-Designated Scenic Highway 12

Placement of emergency wells within 200 feet of State-designated Scenic Highway 12 between Danielli Avenue and Pythian Drive shall be avoided, if feasible. If placement of an emergency well is necessary within 200 feet of Highway 12 in this area, the facilities shall be designed and implemented so that they do not detract from the scenic quality along Highway 12. Such design and implementation may include, but would not be limited to, designing emergency well facilities to incorporate building features and design elements that are compatible with the surroundings and designing landscaping plans to screen views of new structures and equipment from motorists along Highway 12.

Mitigation Measure AQ-1: BAAQMD Basic Construction Measures

To limit dust, criteria pollutants, and precursor emissions associated with the construction activity, the City shall include following BAAQMD-recommended Basic Construction Measures in all construction contract specifications for the proposed 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;
- 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 pipeline replacement 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
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure AQ-2: Reduce Health Risk from Emergency Well Construction

The City shall require construction activities to utilize off-road diesel-powered equipment that meets the U.S. EPA Tier 2 engine requirements for particulate matter emissions, if emergency wells are located within the following distances of sensitive receptors (i.e., residential uses, schools, and overnight health care facilities):

- Within 300 feet of sensitive receptors to the north of the emergency well, as defined as the area extending 300 feet to the north between the western and eastern limits of construction; and
- Within 300 feet of sensitive receptors to the northeast of the construction site, as defined as the area within the northeast quadrant within 300 feet of the emergency well.

Mitigation Measure BIO-1a: Avoid Loss of Listed or CNPS List 1B Plants and their Habitats

The City shall avoid loss of state and federally listed or proposed plant species, state candidates for listing, CNPS List 1B species, and occupied or critical habitat for these species, to the extent feasible. Where avoidance of individuals or habitat is infeasible, the City shall compensate for loss as required by the U.S. Fish and Wildlife Service and/or CDFW. For ground disturbance

within vegetated areas (excluding landscape and ruderal areas), reconnaissance-level surveys shall be performed to determine whether the area affected may contain suitable habitat. If habitat for listed or CNPS List 1B plants is not identified during the surveys, then no further mitigation for impacts to target species are necessary under this measure.

If the area does contain potential suitable habitat, protocol-level surveys to determine presence or absence of target species shall be conducted prior to construction wherever habitats for these species would be impacted, unless the City assumes presence of the species and implements compensatory measures.

The following measures are examples of those that would be required by the U.S. Fish and Wildlife Service and/or CDFW.

- Where project activities result in impacts to vernal pool habitats, the conservation measures described in the Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects that May Affect Four Endangered Plant Species on the Santa Rosa Plain, California (Corps File # 22342N) may need to be implemented.
- Listed or List 1B plants within the project footprint may need to be transplanted to a mitigation site approved by the California Department of Fish and Game and U.S. Fish and Wildlife Service. Seed from plants unavoidably impacted may need to be collected and preserved for planting on an approved mitigation site.
- Where construction activities unavoidably affect a listed or List 1B plant species, corridor widths may need to be limited to a maximum of 30 feet through plant habitat.
- All storage and staging areas may need to be located outside listed or List 1B plant habitat.

Mitigation Measure BIO-1b: Avoid Loss of Sensitive Plant Species

The City shall avoid loss of individuals of a CNPS List 2, 3, or 4 (sensitive) plant species if impacts exceed 10 percent of the known occurrences within Sonoma County. A qualified botanist or biologist shall evaluate proposed sites to determine the potential for CNPS List 2, 3, or 4 plants. If the botanist or biologist determines that the site could support special-status plant species, then surveys for sensitive plant species shall be conducted by a qualified botanist during the bloom period. If special-status plants are identified with the construction area, the City shall attempt to avoid loss by adjusting construction boundaries to avoid sensitive plants.

Mitigation Measure BIO-1c Protect Federally and State Listed Endangered Species

The City of Santa Rosa shall avoid loss of habitat or individuals of federally and State listed endangered species, to the extent feasible. Where avoidance of individuals or habitat is infeasible, the City shall compensate for loss as required by the U.S. Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Wildlife. For ground disturbance within areas of potential habitat of the listed species, reconnaissance-level surveys shall be performed to determine whether the area affected may contain suitable habitat. If the area does contain suitable habitat, protocol-level surveys to determine presence or absence of target species shall be conducted prior to construction wherever habitats for these species would be impacted, unless the City assumes presence of the species and implements compensatory measures.

The following measures are examples of those that would be required by the U.S. Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Wildlife.

California tiger salamander

- Potential habitat for the California tiger salamander is defined as land designated by the Santa Rosa Plain Conservation Strategy Map (last revised by CDFW on April 16, 2007) or any subsequent prevailing documents as requiring mitigation for impacts to the salamander.
- Mitigation for impacts to California Tiger Salamander habitat shall be as stipulated in the Santa Rosa Plain Conservation Strategy (USFWS 2005) or any subsequent guidance adopted by USFWS. Such documents include the Programmatic Biological Opinion for U.S. Army Corps of Engineers Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California (USFWS 2007). Interim mitigation ratios shall be used until the strategy is fully implemented. Mitigation lands shall be located within the watershed where the impact occurs. A conservation easement shall be placed on the mitigation site to preserve the site in perpetuity as wildlife habitat. A long-term management plan shall be developed for the mitigation site to be approved by the USFWS.
- Minimization measures contained in Section 5.2 (Minimization Measures) of the Santa Rosa Plain Conservation Strategy (USFWS 2005) or any subsequent guidance adopted by the USFWS shall be implemented during work within areas where California tiger salamanders may occur.
- Initial ground disturbing construction activities in habitat shall be limited to the dry season (June through October) when salamanders are not moving between terrestrial habitat and aquatic breeding habitat.

California red-legged frog

- Potential habitat for the California red-legged frog is defined as the area within 300 feet of the top of bank of a waterbody which the CNDDDB indicates has had sightings of the species within its watershed.
- Mitigation for impacts to California red-legged frog habitat (CRLF) shall be as stipulated in the U.S. Fish and Wildlife Service (USFWS) (1999) Programmatic Endangered Species Consultation to avoid impacts to California red-legged frog.
- Ground disturbing construction activities shall be limited to the dry season period from April 1 through November 1 to avoid potential red-legged frog dispersal events.
- A qualified biologist shall conduct a pre-construction survey immediately preceding any construction activity that occurs in potential CRLF habitat. If no CRLF are observed, wildlife exclusion fencing will be erected around the area to be excavated for the new pond to prevent CRLF from entering the excavation area during construction. Typical wildlife exclusion fence consists of 3-foot tall silt fence that is buried at least 6 inches in the ground.

- If CRLF are found, then the USFWS and CDFW shall be notified immediately, and instructions from the USFWS will be followed.
- Before the onset of any construction activities, the project engineer and USFWS-approved biologist shall identify locations for equipment, personnel access and materials staging other than those identified in the project description to minimize disturbance to red-legged frog habitat.
- Prior to the start of construction, a USFWS-approved biologist shall train all construction personnel regarding habitat sensitivity, identification of special status species, and required practices before the start of construction.
- Because dusk and dawn are often the times when CRLF are most actively foraging and dispersing, all construction activities shall cease one-half hour before sunset and shall not begin prior to one-half hour before sunrise.
- A USFWS-approved biologist shall be onsite during all ground-disturbance related activities (i.e., vegetation grubbing, excavation) to ensure compliance with these avoidance measures.
- After ground disturbing activities are complete, the USFWS-approved biologist or trained construction monitor shall complete a daily log summarizing activities and environmental compliance.
- If a CRLF is encountered during construction, all construction activities in the immediate area shall cease until the animal moves away of its own volition.
- The fueling and maintenance of vehicles and other equipment shall occur at least 20 meters from any riparian habitat or waterbody.
- To prevent CRLF from becoming entangled or trapped in erosion control materials, plastic mono-filament netting (i.e., erosion control matting) or similar material shall not be used within the action area. Acceptable substitutes include coconut coir matting or similar material.

California freshwater shrimp, steelhead (Central California Coastal ESU), and coho salmon (Central California Coastal ESU)

- Use tunneling methods to cross creeks with 1) surface flow at the time of construction and 2) occupied at any time of year by steelhead, coho salmon (collectively “listed salmonids”), or California freshwater shrimp. If bore pits are required, they shall be located outside the riparian corridor along occupied streams, and no vegetation shall be removed along the streambank.
- Open trenching across creeks is permissible with 1) no surface flow at the time of construction and 2) occupied at any time of year by listed salmonids or California freshwater shrimp, with approval of the resource agencies. The construction corridor at the crossing shall be restricted to 30 feet wide.
- All temporarily impacted habitat shall be restored to pre-project conditions upon completion of construction activities.

Mitigation Measure BIO-1d: Protect Special-Status Aquatic Species

Where pipelines must cross a creek, the City shall ensure that a qualified biologist conduct pre-construction surveys for special-status aquatic species before open-cut trenching across a creek. If any special-status species are found, the City shall avoid the creek, tunnel under the creek, or wait until the creek is dry. All temporarily impacted habitat shall be restored to pre-project conditions upon completion of construction activities.

Mitigation Measure BIO-1e: Protect Western Pond Turtle

Where pipelines must cross a creek, or where test wells or emergency wells are sited within 250 feet of a water body, the City shall ensure that preconstruction surveys for the western pond turtle shall be conducted by a qualified biologist. If western pond turtles are found during preconstruction surveys, CDFW shall be notified and individuals shall be captured by a qualified biologist and relocated to suitable areas. If preconstruction surveys identify active nests, a qualified biologist shall establish a no-disturbance buffer zone around the nest using temporary orange exclusion fencing. The radius of the buffer zone and the duration of the exclusion shall be determined in consultation with CDFW. The buffer zone and fencing shall remain in place until the young have left the nest, as determined by the biologist.

Mitigation Measure BIO-1f: Protect Yellow-legged Frog

Where pipelines must cross a creek, or where test wells or emergency wells are sited within 250 feet of a water body, the City shall ensure that preconstruction surveys for yellow-legged frogs shall be conducted by a qualified biologist. If potential habitat for the frog is identified, construction activities shall be scheduled so that they do not interfere with the reproductive cycles of the foothill yellow-legged frog, by restricting work within the ordinary high water zone and riparian zone of creeks to the period from June 15 to October 15. Work periods shall be timed to avoid the breeding season of the foothill yellow-legged frog, as well as the majority of the incubation period of frog eggs.

If work is required outside of the period from June 15 to October 15, the City shall retain a qualified wildlife biologist to conduct a pre-construction survey for foothill yellow-legged frog. The survey would be conducted within 24 hours prior to the start of construction activities in the creek. If a foothill yellow-legged frog or frog eggs are located in or adjacent to the construction zone, the biologist shall attempt to passively move the species out of the area or the biologist shall capture and move the yellow-legged frog or eggs downstream, out of the construction zone.

The following measures are examples of those that would be required by the U.S. Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Wildlife.

Mitigation Measure BIO-1g: Protect Special-Status Birds, Migratory Birds and Raptors during Construction

The City shall ensure that preconstruction surveys for nesting special-status birds, migratory birds, or raptors are conducted for construction commencing between February 1 and October 15. Surveys shall be completed by a qualified wildlife biologist who is experienced in identifying birds and their habitat and surveys shall be completed within 14 days of construction. Trees within a minimum 300-foot radius of proposed construction shall be included in the survey.

If the biologist detects no active nesting by special-status or migratory birds or raptors, then work may proceed without restrictions. If migratory bird and/or active raptor nests are identified, the biologist shall determine whether or not construction activities might impact the active nest or disrupt reproductive behavior. If it is determined that construction would not affect an active nest or disrupt breeding behavior, construction may proceed without any restriction.

If the qualified biologist determines that construction activities would likely disrupt special-status birds, migratory birds, or raptor nesting activities, then a no-disturbance buffer around the nesting location shall be established to avoid disturbance or destruction of the nest site until after the breeding season or after a wildlife biologist determines that the young have fledged (usually late June through mid-July). The extent of these buffers would be determined by a wildlife biologist in consultation with the CDFW and would depend on the species' sensitivity to disturbance (which can vary among species); the level of noise or construction disturbance; line of sight between the nest and the disturbance; ambient levels of noise and other disturbances; and consideration of other topographical or artificial barriers. Typically a 50-foot buffer shall be required for passerines and a 250-foot buffer for raptors; however the wildlife biologist shall analyze and use the above factors in making an appropriate decision on buffer distances.

Mitigation Measure BIO-1h: Protect Special-Status Bats during Tree or Structure Removal

Not more than two weeks prior to removal of a building or structure, the City shall ensure that a qualified biologist (i.e., one familiar with the identification of bats and signs of bats) survey the building or structure for the presence of roosting bats or evidence of bats. If no roosting bats or evidence of bats are found in the structure, demolition may proceed. If the biologist determines or presumes bats are present, the biologist shall exclude the bats from suitable spaces by installing one-way exclusion devices. After the bats vacate the space, the biologist shall close off the space to prevent recolonization. Building or structure demolition shall only commence after the biologist verifies seven to 10 days later that the exclusion methods have successfully prevented bats from returning. To avoid impacts on non-volant (i.e., non-flying) bats, the biologist shall only conduct bat exclusion and eviction from February 15 through April 15 and from August 15 through October 30.

Prior to the removal of large trees scheduled during seasonal periods of bat activity (February 15 through April 15 and August 15 through October 30), a qualified bat biologist shall conduct a bat habitat assessment to determine the presence of suitable bat roosting habitat. No more than 30 days before removal of any large tree or snag, a biologist familiar with identification of bats and signs of bats will conduct a pre-construction survey for signs of bat activity. If construction is postponed or interrupted for more than 30 days from the date of the initial bat survey, the biologist shall repeat the pre-construction survey.

If a tree provides potentially suitable roosting habitat, but bats are not present, bats shall be excluded by temporarily sealing cavities, pruning limbs, or removing the entire tree, in consultation with the qualified bat biologist. Trees and snags with cavities or loose bark that exhibit evidence of use by bats shall be scheduled for bat exclusion and/or eviction, conducted during appropriate seasons (i.e., February 15 through April 15 and August 15 through October 30) and supervised by the biologist.

Mitigation Measure BIO-1i: Minimize Impacts to American Badger

The City shall ensure that a qualified biologist conduct a pre-construction survey for badger burrows for disturbance in annual grasslands. In the event that a badger burrow is identified within the limits of construction prior to ground-disturbing construction activities (e.g., grading, excavation, trenching), CDFW shall be contacted to determine if any setback requirements would be needed during construction or if active trapping and relocation is an option. If a suspected badger burrow is identified during construction, construction shall temporarily cease in the immediate area, until the CDFW has been contacted. The City shall relocate any badgers as directed by CDFW.

Mitigation Measure BIO-2: Avoid or Compensate for Loss of Sensitive Natural Communities

If oaks or evergreen trees greater than 5 inches dbh (diameter at breast height) or chaparral need to be removed for construction of the facility, the City shall retain a qualified biologist to determine if the trees or chaparral is part of a sensitive natural community. Any loss of oak woodland, mixed evergreen forest, or chaparral sensitive natural communities shall be avoided.

If test wells or emergency wells are located within potential riparian vegetation, or if pipelines are installed across creeks, and open-trench alignments or tunneling pits are located within riparian vegetation, then the City shall conduct pre-construction surveys to identify the extent of riparian vegetation. If the location of the wells or pipelines would cause loss of riparian vegetation, the City shall retain a licensed landscape architect or qualified field biologist to develop a riparian revegetation plan. The riparian revegetation plan shall be based on guidelines maintained by the City and shall include replanting (either on-site or off-site). The goal of such a plan is to ensure no net loss of acreage or of functional value of riparian habitat. The plan shall include planting requirements, monitoring requirements, and an adaptive management strategy, and the City shall implement the plan's provisions.

Mitigation Measure BIO-3: Protect Wetlands and Waters

The City shall conduct a wetlands study for areas that will be permanently or temporarily disturbed to confirm the location, extent, and regulatory status of wetland and water features within the affected parcel. Sites that are entirely paved, compacted, or maintained landscaped areas are not subject to this measure. If jurisdictional waters cannot be avoided, the City shall obtain a Clean Water Act (CWA) Section 404 permit from the United States Army Corps of Engineers and a Section 401 permit from the North Coast Regional Water Quality Control Board and shall implement the permit requirements.

The City shall ensure that the project will result in no net loss of waters of the U.S. or State by requiring mitigation through impact avoidance, impact minimization, and/or compensatory mitigation for the impact, as determined in the CWA Section 404/401 permits.

Compensatory mitigation may consist of the following:

- Obtaining credits from a mitigation bank.
- Making a payment to an in-lieu fee program that will conduct wetland, stream or aquatic resource restoration, creation, enhancement, or preservation activities (the sum of money

paid would be determined during negotiations between the federal, State, and local agencies involved).

- Providing compensatory mitigation through aquatic resource restoration, establishment, enhancement, and/or preservation activity.

Mitigation Measure BIO-4: Comply with City of Santa Rosa Tree Ordinance

The City shall replace any protected or heritage trees in accordance with tree replanting requirements indicated in Santa Rosa Municipal Code Chapter 17-24. Replacement trees shall be planted on the Project site; however, if the Project site is inadequate in size to accommodate the replacement trees, the trees shall be planted on public property with the approval of the Director of the City's Community Development Department.

Mitigation Measure CR-1: Identify and Avoid or Minimize Impacts to Historical Resources

Prior to ground-disturbing activities, a literature and archival records search shall be conducted to identify known historical resources within or near the Project facility. If potentially historic resources or buildings older than 45 years are located within 100 feet of the Project facility, then a qualified historian or historical architect shall be retained to perform an evaluation of the potential historical resource and determine whether the Project facility would materially impair the resource. If the resource is determined to qualify as a historical resource under CEQA Guidelines section 15064.5(a) and the Project facility would materially impair the resource, such impacts to the historical resource shall be avoided. The improvement shall be designed, constructed, and operated to avoid material impairment of the historical resource. Measures may include, for example, temporary protective barriers, construction worker training, movement of the facility, architectural design changes, or landscape screening.

If subsurface historical materials are encountered during construction activities, the piece of equipment that encounters the materials shall be stopped, and the find inspected by a qualified historian/archaeologist. Project personnel shall not collect historical materials. If the historian/archaeologist determines that the find qualifies as a unique historical resource for purposes of CEQA (CEQA Guidelines Section 15064.5(c)(3)), all work must be stopped in the immediate vicinity to allow the archaeologist to evaluate any materials and recommend appropriate treatment. Such treatment and resolution shall include either modifying the Project to allow the materials to be left in place or undertaking data recovery of the materials in accordance with standard archaeological methods. The preferred treatment of the resource is protection and preservation.

Mitigation Measure CR-2: Identify and Avoid or Minimize Impacts to Archaeological Resources

Prior to ground-disturbing activities, a literature and archival records search shall be conducted with the Northwest Information Center to identify known archaeological resources within the vicinity of the Project facility. If archaeological resources are located within the vicinity of the Project site, then a qualified archaeologist shall be retained to perform an evaluation of the potential resource. If the resource is determined to qualify as an archaeological resource for purposes of CEQA (CEQA Guidelines Section 15064.5(c)) and the Project facility has the potential to adversely affect the resource, such impacts to the archaeological resource shall be

avoided. The improvement shall be designed, constructed, and operated to avoid material impairment of the resource. Measures may include, for example, temporary protective barriers, construction worker training, Native American monitoring, or movement of the facility. The City shall notify interested Native American tribes of the siting of specific project facilities, the records search results obtained for each of them, and consult with interested tribes regarding the measures recommended for avoidance of known resources.

If archaeological materials are encountered during construction activities, construction in the immediate vicinity shall be stopped, until the find is inspected by a qualified archaeologist. Project personnel shall not collect cultural materials. If the archaeologist determines that the find potentially qualifies as a unique archaeological resource for purposes of CEQA (CEQA Guidelines Section 15064.5(c)(3)), all work must remain stopped in the immediate vicinity to allow the archaeologist to evaluate any materials and recommend appropriate treatment. The City shall notify interested Native American tribes of such discoveries and consult with the tribe from which the resources originated, according to the Native American Heritage Commission. Such treatment and resolution shall include either modifying the Project to allow the materials to be left in place or undertaking data recovery of the materials in accordance with standard archaeological methods. The preferred treatment of the resource is protection and preservation.

Mitigation Measure CR-3: Procedures for Encountering Human Remains

California Health and Safety Code Section 7050.5 states that it is a misdemeanor to knowingly disturb a human grave. If human graves are encountered, the City and its Contractor shall ensure that work shall halt in the vicinity and the County Coroner shall be notified. At the same time, a qualified archaeologist shall be contacted to evaluate the situation. If human remains are of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of identification, pursuant to Public Resources Code 5097.98. The Native American Heritage Commission will identify the person or persons most likely descended from the deceased. The City shall notify the tribe(s) and coordinate with them regarding the Most Likely Descendant and preferred treatment of the remains with appropriate dignity. A Tribal Treatment Plan covering reburial of human remains and disposition of the artifacts and other cultural resources should be agreed to by all parties.

Mitigation Measure CR-4: Avoid or Document Unknown Paleontological Resources

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.

Mitigation Measure GEO-1: Siting of Facilities to Avoid Alquist-Priolo Fault Zones

The City of Santa Rosa shall avoid siting new test wells, emergency well facilities, and pipelines within the Rodgers Creek Alquist-Priolo Earthquake Fault Zone. If a pipeline is to be located

within Rodgers Creek fault zone, the City shall utilize a professional geotechnical engineer and, when appropriate, a structural engineer to conduct design-level geotechnical investigation to locate faults and identify the appropriate setback between the fault and the facilities. The recommendations made in the geotechnical study shall be incorporated into the final plans and specifications and implemented during construction.

The geotechnical study shall identify hazards due to the fault zone, and provide engineering design and construction recommendations to prevent damage. This may include, but would not be limited to, one or more of the following:

- At the fault crossing where adequate room exists, trenches can be designed so that a buried pipe could deform and accommodate fault slip without failing.
- Design pipeline trenches, pipe embedment with sloping sidewalls, and use pipe embedment materials that offer flexibility with ground movements.
- If the pipe runs parallel to a fault, use steel or HDPE pipe with restrained joints as appropriate for the setting.
- For fault rupture (the fault slips at or very close to the facility location), if it is not practical to design for the large potential displacements, prepare a contingency plan to repair the pipe (have available sections of pipe and plan to expedite repair).
- For creep (one side of the fault is slowly moving relative to the other), install a "rattle box", where the pipe crosses the fault in a box rather than direct burial.
- Specify special classes or types of pipelines crossing the active fault zones, such as restrained joint or welded steel pipes.
- Install shut-off valves at key locations beyond the limits of the fault zone.

Mitigation Measure GEO-2: Reduce Risk of Damage from Unstable Soils, Liquefaction, Landslides and Slope Stability, and Expansive Soils

If emergency well facilities are constructed in areas with slopes exceeding ten percent, as shown on Figure 7-3 of the Santa Rosa General Plan 2035, or in areas of high liquefaction potential, as shown on USGS Open File Report 06-1037, Liquefaction Susceptibility, or in an area with soils with high shrink-swell potential, as indicated in the Sonoma County Soil Survey, then the City shall require a design-level geotechnical study be prepared for the emergency well facility. Such well facilities shall be designed and constructed in conformance with the specific recommendations contained in the design-level geotechnical study, including recommendations for grading, ground improvement, and foundation support. The recommendations made in the geotechnical study shall be incorporated into the final plans and specifications and implemented during construction.

The geotechnical study shall identify and propose measures for any soils or geological problems that may affect site stability or structural integrity, including landslide risk, liquefaction potential, seismically-induced landsliding, or weak and expansive soils. This may include, but would not be limited to, one or more of the following:

- Removal and replacement of unstable materials in an existing landslide or in an actively eroding area with a stronger material.
- Retaining walls or other external applications to strengthen slopes.

- Removal of native soil and replacement with an engineered fill material not prone to shrinking and swelling or liquefaction.
- Soil stabilization, such as lime treatment to alter soil properties to reduce shrink-swell potential to an acceptable level

Mitigation Measure GHG-1: Reduce Emissions from Construction Activities

The City and its contractors shall implement actions 9.2.1 through 9.2.3 of the City's CAP during construction, as follows:

- Action 9.2.1 - Minimize idling times either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes or less (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Provide clear signage at all access points to remind employees of idling restrictions.
- Action 9.2.2 - Construction equipment shall be maintained in accordance with manufacturer's specifications.
- Action 9.2.3 - Work with project applicants to limit GHG emissions from construction equipment by selecting one of the following measures, as feasible and appropriate to the construction project:
 - a. Substitute electrified equipment for diesel- and gasoline-powered equipment where practical.
 - b. Use alternative fuels for construction equipment on-site, where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.
 - c. Avoid the use of on-site generators by connecting to grid electricity or utilizing solar-powered equipment.

Mitigation Measure HAZ-1: Siting Near a Known Contamination Site

The City of Santa Rosa shall determine whether known hazardous material sites are located within 250 feet of a test well or emergency well site. If the well location is located near such sites, the City shall require the contractor(s) to implement control measures to protect human health and the environment during construction, including, but not limited to, the following:

- Prepare and implement a site-specific health and safety plan in accordance with federal OSHA regulations (29 CFR 1910.120) and Cal-OSHA regulations (8 CCR Title 8, Section 5192) to address worker health and safety issues during construction. The health and safety plan shall identify the potentially present chemicals, health and safety hazards associated with those chemicals, all required measures to protect construction workers and the general public from exposure to harmful levels of any chemicals identified at the site (including engineering controls, monitoring, and security measures to prevent unauthorized entry to the work area), appropriate personal protective equipment, and emergency response procedures. The health and safety plan shall designate qualified individuals responsible for implementing the plan and for directing subsequent procedures in the event that unanticipated contamination is encountered.

- Prepare and implement a hazardous materials management plan that specifies the method for handling and disposal of both chemical products and hazardous materials used in construction and contaminated soil and groundwater, should any be encountered during construction. Contract specifications shall mandate full compliance with all applicable local, State, and federal regulations related to identifying, transporting, and disposing of hazardous materials, including those encountered in excavated soil. The contractor shall submit the Plan to the City and the Sonoma County Environmental Health Division for review and approval. Elements of the plan shall include:
 - o Measures to address hazardous materials and other worker health and safety issues during construction, including the specific level of protection required for construction workers.
 - o Provisions for excavation of soil, stockpiling, dust, and odor control measures.
 - o Measures to prevent off-site migration of contaminated soil and groundwater.
 - o Location and final disposition of all soil and groundwater removed from the site.
 - o All other necessary procedures to ensure that excavated materials are stored, managed, and disposed of in a manner that is protective of human health and in accordance with applicable laws and regulations.

Mitigation Measure HAZ-2: Reduce Wildland Fire Hazards during Construction

Where a new emergency well, test well, or pipeline is to be located within a very high fire hazard severity zone as shown on the latest CALFIRE Fire and Resource Assessment Program Map for Santa Rosa, the City and its contractor(s) shall remove and 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 sites when working in high fire hazard areas to assist in quickly extinguishing any small fires. The contractors shall have on site the phone number for the local fire department(s) when working in fire hazard areas.

Mitigation Measure HYD-1a: Management of Well Development and Pump Testing Discharges

During well development and pump testing, if discharging to a local surface water or storm drain, the City shall first obtain coverage under North Coast Regional Water Quality Control Board Order No. R1-2009-0045, Waste Discharge Requirements for Low Threat Discharges to Surface Waters in the North Coast Region. The City shall submit permit registration documents to the North Coast Regional Water Quality Control Board, including development of a Best Management Practices/Pollution Prevention Plan to characterize the discharge and to identify specific measures to control the discharge, such as sediment controls to ensure that excessive sediment is not discharged, and flow controls to prevent erosion and flooding downstream of the discharge. The City shall ensure that the Contractor oversees implementation of the Best Management Practices/Pollution Prevention Plan during well development and pump testing activities, including visual inspections and ensuring overall compliance.

Mitigation Measure HYD-1b: Locate Emergency Wells to Protect Groundwater Quality

Where the City identifies a potential emergency well site within 1,000 feet of a known area of soil or groundwater contamination, the City shall retain a certified hydrogeologist or professional geologist to evaluate the contamination site(s) to determine the nature and status of the contamination and to evaluate the potential water quality impacts from emergency pumping. The hydrogeologist or geologist shall review records from the North Coast Regional Water Quality Control Board and other databases with relevant contamination information. If a known site is identified as "Closed", "Not Active", or "No Remediation Required" then the City can install the emergency well without further evaluation of potential groundwater impacts.

If open cases are identified within 1,000 feet of the proposed well site, the City's hydrogeologist or geologist shall prepare a Drinking Water Source Assessment according to the Program outlined by the California Department of Public Health. In accordance with the Department's policies, if the Assessment indicates a vulnerability score of 7 or less, the well may proceed at that location. If the vulnerability score is 8 or more, then the well site must be relocated.

Mitigation Measure HYD-2: Locate Emergency Wells to Reduce Well Interference Impacts at Existing Potable Wells

The City shall site emergency wells to avoid or reduce potential impacts to existing potable water wells where the existing domestic well screen extends into the same intermediate or deep aquifer from which the emergency well would draw groundwater. On the west side of the Rodgers Creek fault zone, the City shall locate emergency wells at least 250 feet away from such existing wells, if feasible. On the east side of the Rodgers Creek fault zone, the City shall locate emergency wells at least 75 feet away from such existing wells, if feasible. If a City emergency well must be located within 250 feet of a such a well on the west side of the Rodgers Creek fault zone, or within 75 feet of such a well on the east side of the fault zone, and the existing well is impacted during emergency pumping, the City shall provide a temporary water supply to the existing well owner equivalent to the water supply made available to City residents during the emergency conditions. Impacts to such an existing well are considered to occur if the existing well production capacity declines to below levels needed to supply potable water for health and safety purposes during operation of the City's emergency well. The City shall continue to provide a temporary water supply until the pre-emergency pumping capacity of the existing potable well resumes following shutdown of the City's emergency well.

Mitigation Measure HYD-3: Locate Emergency Wells to Reduce Impacts to Surface Water Bodies

The City shall site emergency wells to avoid potential impacts to nearby surface water bodies by locating emergency wells 250 feet away from a water body in areas of the City on the west side of the Rodgers Creek fault zone, or 75 feet on the east side of the fault zone, if feasible. If an emergency well must be located closer than 250 feet of a water body in areas of the City on the west side of the Rodgers Creek Fault, or within 75 feet of a water body in areas of the City on the east side of the Rodgers Creek Fault, the City shall retain a certified hydrogeologist or professional geologist to evaluate the potential impacts from emergency pumping at 700 gpm (or the planned pumping capacity for the individual well) for the maximum operating scenario of 15 days continuous pumping per year. If the hydrogeologist or geologist determines that pumping

from an emergency well at the proposed location could cause a reduction of flow or a decline in water levels to surface water bodies, then the City shall change the proposed site of the emergency well.

Mitigation Measure NOI-1: Reduce Daytime Construction-Related Noise

Construction of a test well or emergency well on a school shall be scheduled to occur when the school is not in session. Daytime construction activities associated with well facility construction occurring within 80 feet of a residential, school, or overnight health care land use shall implement construction noise control measures. Noise control measures may include, but would not be limited to the following:

- All equipment driven by internal combustion engines shall be equipped with mufflers which are in good condition and appropriate for the equipment.
- The construction contractor shall utilize “quiet” models of air compressors and other stationary noise sources where technology exists.
- Unnecessary idling of internal combustion engines shall be prohibited.
- At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors.
- All stationary construction equipment shall be placed so that the emitted noise is directed away from sensitive receptors nearest the project site.
- Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.
- The construction contractor shall designate a “noise disturbance coordinator” who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and institute reasonable measures as warranted to correct the problem (e.g., to ensure that the measures above are implemented). A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.

Mitigation Measure NOI-2: Reduce Nighttime Construction-Related Noise

Nighttime construction activities associated with emergency well or test well construction occurring within 450 feet of a residential or overnight health care land use shall implement construction noise control measures to further reduce noise.

The City shall provide a minimum 24-hour advance notice to residents within 450 feet of a well site prior to nighttime work. The advance notice shall provide information regarding anticipated schedule, hours of operation and a designated project contact person.

The designated project contact shall be responsible for responding to noise complaints during the construction phases. The name and phone number of the liaison shall be posted at construction areas and on advanced notifications. This person shall take steps to resolve complaints, including periodic noise monitoring, if necessary. Results of noise monitoring shall be presented at regular Project meetings with the contractor. A reporting program shall be required that documents complaints received, actions taken to resolve problems, and effectiveness of these actions.

Additional measures to reduce nighttime construction noise shall also be implemented, which may include, but would not be limited to the following:

- To the extent consistent with applicable regulations and safety considerations, operation of vehicles requiring use of back-up beepers shall be avoided near sensitive receptors during nighttime hours and/or the work sites shall be arranged in a way that avoids the need for any reverse motions of large trucks or the sounding of any reverse motion alarms during nighttime work. If these measures are not feasible, trucks operating during the nighttime hours with reverse motion alarms shall be outfitted with SAE J994 Class D alarms (ambient-adjusting, or “smart alarms” that automatically adjust the alarm to 5 dBA above the ambient near the operating equipment).
- Maintain orderly conduct among workers, including worker conversation noise during nighttime hours.
- Schedule work and deliveries to minimize noise-generating activities during nighttime hours at work sites (e.g., no deliveries or non-essential work).
- Maintain the equipment properly to minimize extraneous noise due to squeaking or rubbing machinery parts, damaged mufflers, or misfiring engines.
- Stationary noise sources shall be located as far from sensitive noise receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used. Enclosure openings or venting shall face away from sensitive noise receptors.
- Locate equipment at the work area to maximize the distance to noise-sensitive receptors and to take advantage of any shielding that may be provided by other on-site equipment.
- Utilize sound blankets to reduce noise from the drilling rig.

Mitigation Measure NOI-3: Reduce Vibration Levels during Construction

The City shall substitute the use of vibratory compaction equipment within 20 feet of residential structures with non-vibratory compaction or controlled low strength materials (CLSM) backfill.

Mitigation Measure TR-1: Traffic Control Plan

The City shall prepare and implement a traffic control plan for construction activities. The traffic control plan shall be prepared in accordance with the City's Standard Conditions of Approval Section C(7)(e) and Caltrans standards, including the latest edition of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones, and shall be coordinated with local transit service providers.

The traffic control plan shall identify designated truck routes, construction site access, address any impacts to the circulation system (including pedestrian and bicycle access and safety), and address construction detours and lane closures as necessary. The traffic control plan shall also identify construction staging and worker parking areas, and consider restrictions on truck trips during peak morning and evening commute hours, if necessary.

The traffic control plan shall also ensure that fire truck and emergency vehicle access be maintained to all buildings during construction. Any detours shall be clearly marked in all areas potentially affected by construction to avoid confusion. The City shall coordinate any required construction detours with the fire and police departments to ensure compatibility with emergency

response plans and to maintain continued access for emergency vehicles. The City and its contractor(s) shall be required to have ready at all times the means necessary to accommodate access by emergency vehicles to the site and surrounding areas and through intersections, such as plating over excavations, as needed.

Mitigation Measure TR-2: Minimize Impacts to Bicycle, Pedestrian and Transit Facilities

Construction shall be coordinated with local transit service providers to arrange the temporary relocation of bus routes or bus stops in work zones, if necessary. Pedestrian and bicycle access and circulation shall be maintained during Project construction where safe to do so. If construction activities encroach on a bicycle lane, warning signs shall be posted that indicate bicycles and vehicles are sharing the lane. Detours shall be included for bicycles and pedestrians in all areas potentially affected by construction. Notices shall be provided to advise bicyclists and pedestrians of any temporary detours around construction zones. If bicycle, pedestrian or transit facilities are permanently impacted by construction of test well or emergency well sites, the City shall permanently relocate or reroute these facilities such that the original performance objectives of the facilities are met.

2. Response to Agency and Public Comments

The City received seven comment letters and/or emails during the comment period. The comment letters and emails are provided in the following pages. The City's responses to the comments follow each of the comment letters.

Where revisions to the text of the Initial Study/Proposed MND are called for, the page and paragraph are set forth, followed by the appropriate revision. Added text is indicated with underlined text. Deletions to text in the IS/Proposed MND are shown with ~~striketrough~~ text.



EDMUND G. BROWN JR.
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE of PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT



KEN ALEX
DIRECTOR

August 21, 2013

RECEIVED

AUG 23 2013

**ENVIRONMENTAL
COMPLIANCE SECTION**

Jennifer Burke
City of Santa Rosa
4300 Llano Road
Santa Rosa, CA 95407

Subject: Groundwater Master Plan
SCH#: 2013072046

Dear Jennifer Burke:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on August 20, 2013, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

1-1

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures

cc: Resources Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

Comment Letter #1
cont'd

SCH# 2013072046
Project Title Groundwater Master Plan
Lead Agency Santa Rosa, City of

Type **MND** Mitigated Negative Declaration
Description The City of Santa Rosa Groundwater Master Plan would establish policies and strategies to manage the available groundwater resources in a sustainable manner for potential future beneficial uses. The Groundwater Master Plan contains a list of recommended policies, programs and projects required to meet the City's emergency groundwater supply needs now and in the future, including installation of emergency groundwater wells to provide an additional 8.4 million gallons per day of emergency groundwater capacity.

Lead Agency Contact

Name Jennifer Burke
Agency City of Santa Rosa
Phone 707 543 3359
email
Address 4300 Llano Road
City Santa Rosa
Fax
State CA **Zip** 95407

Project Location

County Sonoma
City Santa Rosa
Region
Lat / Long
Cross Streets The project encompasses the City of Santa Rosa's urban growth boundary
Parcel No. multiple
Township
Range
Section
Base

Proximity to:

Highways Hwy 12, 101
Airports
Railways SMART, NWP
Waterways Multiple
Schools Multiple
Land Use Citywide (varies)

1-1
cont'd

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 3; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Office of Emergency Management Agency, California; California Highway Patrol; Caltrans, District 4; CA Department of Public Health; State Water Resources Control Board, Division of Financial Assistance; State Water Resources Control Board, Division of Water Rights; Regional Water Quality Control Board, Region 1; Native American Heritage Commission; Public Utilities Commission; Colorado River Board

Date Received 07/22/2013 **Start of Review** 07/22/2013 **End of Review** 08/20/2013

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY

EDMUND G. BROWN, JR., GOVERNOR

DEPARTMENT OF TRANSPORTATION

111 GRAND AVENUE
P.O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-6053
FAX (510) 286-5559
TTY 711
www.dot.ca.gov



Flex your power!
Be energy efficient!

CLEAR
08/20/13
E

August 19, 2013

SON-GEN
SONGEN159
SCH #2013072046

RECEIVED

AUG 20 2013

STATE CLEARING HOUSE

Ms. Jennifer Burke
Utilities Department
City of Santa Rosa
4300 Llano Road
Santa Rosa, CA 95407

Dear Ms. Burke:

Santa Rosa Groundwater Master Plan Project – Mitigated Negative Declaration

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Santa Rosa Groundwater Master Plan Project. The following comments are based on the Mitigated Negative Declaration (MND) we received on July 22, 2013. As the lead agency, the City of Santa Rosa is responsible for all project mitigation, including any needed improvements to State highways. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. This information should also be presented in the Mitigation Monitoring and Reporting Plan of the environmental document. Required roadway improvements should be completed prior to issuance of the Certificate of Occupancy. Since an encroachment permit is required for work in the State right of way (ROW), and Caltrans will not issue a permit until our concerns are adequately addressed, we strongly recommend that the City of Santa Rosa work with both the applicant and the Department to ensure that our concerns are resolved during the California Environmental Quality Act (CEQA) process, and in any case prior to submittal of a permit application. Further comments will be provided during the encroachment permit process.

Geotechnical Design

On, page 26, of the MND, Mitigation Measures AES-1: Emergency Well Siting Near State-Designated Scenic Highway 12 should be reviewed by Caltrans's Geotechnical office since the emergency wells may be established within 200 feet of State Route (SR) 12 between Danielli Avenue and Pythian Drive, and the construction of the emergency well involves excavation, grading, and drilling.

1-1
cont'd

Ms. Jennifer Burke/City of Santa Rosa
August 19, 2013
Page 2

On page 55, section V. c) Paleontological or Unique Geological Recourses – Less than Significant with Mitigation, states that the potential impacts to paleontological recourses to be significant, given the potential for unanticipated discoveries to occur during ground-disturbing construction activities. Please clarify the contradiction.

Also page 55 says that the Santa Rosa General Plan shows no paleontological resources in the area. However, parts of Santa Rosa are covered by Glen Ellen and Wilson Grove formations, which include paleontological resources. Please update text to reflect this information.

On page 57, section VI. a.ii) Strong Ground Shaking – Less than significant, states that the project sites are likely to be exposed to ground shaking. Please be aware that Projects that require a special design to mitigate seismic shaking should be considered "Less than Significant with Mitigation".

On page 59, Mitigation Measures GEO-2: Reduce Risk of Damage from Unstable Soils; the CEQA questionnaire on page 56, and the text on page 59 on soil expansiveness are inconsistent. This should be considered "Less than Significant with Mitigation".

Highway Operations

On page 59, Mitigation Measures TR-1: Traffic Control Plan, please be aware that any work that affects the traffic flow on U.S. Highway 101 (US-101) or SR 12 must be approved by and coordinated with Caltrans.

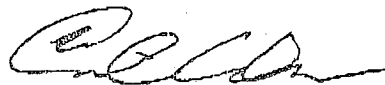
Encroachment Permit

Please be advised that work that encroaches onto the State ROW requires an encroachment permit that is issued by Caltrans. To apply, a completed encroachment permit application, environmental documentation, and five (5) sets of plans, clearly indicating State ROW, must be submitted to: Office of Permits, California DOT, District 4, P.O. Box 23660, Oakland, CA 94623-0660. Traffic-related mitigation measures will be incorporated into the construction plans during the encroachment permit process. See the following website link for more information:

<http://www.dot.ca.gov/hq/traffops/developserv/permits/>

Please feel free to call or email Luis Meléndez of my staff at (510) 286-5606 or Luis_Melendez@dot.ca.gov with any questions regarding this letter, as for any other assistance we may provide.

Sincerely,



ERIK ALM, AICP
District Branch Chief
Local Development - Intergovernmental Review

c: State Clearinghouse

1-1
cont'd

COLORADO RIVER BOARD OF CALIFORNIA

770 FAIRMONT AVENUE, SUITE 100
GLENDALE, CA 91203-1068
(818) 500-1625
(818) 543-4685 FAX

Comment Letter #1
cont'd



Clear
08/20/13
E

RECEIVED

AUG 16 2013

August 9, 2013

STATE CLEARING HOUSE

State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044

Regarding: SCH# 2013 072 046 - Notice of Completion & Environmental Document Transmittal of an Initial Study/Proposed Mitigated Negative Declaration for Santa Rosa Groundwater Master Plan, City of Santa Rosa, California

To Whom It May Concern:

1-1 cont'd The Colorado River Board of California (CRB) has received and reviewed a copy of the Notice of Completion & Environmental Document Transmittal of an Initial Study/Proposed Mitigated Negative Declaration for Santa Rosa Groundwater Master Plan, City of Santa Rosa, California. At this juncture, the CRB has determined that it has no comments regarding the Notice. If you have any questions, please feel free to contact Dr. Jay Chen at (818) 500-1625.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Tanya Trujillo'.

Tanya M. Trujillo
Executive Director

cc: Ms. Jennifer Burke, Deputy Director, Environmental Services, City of Santa Rosa

Response to Comment Letter 1: Governor's Office of Planning and Research, State Clearinghouse and Planning Unit

Response to Comment 1-1

The comment confirms that the State Clearinghouse submitted the IS/ Proposed MND to selected State agencies for review. Each letter received by the State Clearinghouse is responded to individually in this section. The City appreciates the assistance of the State Clearinghouse in providing the IS/ Proposed MND to selected State agencies for review and comment.

COLORADO RIVER BOARD OF CALIFORNIA

770 FAIRMONT AVENUE, SUITE 100
GLENDALE, CA 91203-1068
(818) 500-1625
(818) 543-4685 FAX

**RECEIVED****AUG 19 2013****ENVIRONMENTAL
COMPLIANCE SECTION**

August 9, 2013

State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044

Regarding: SCH# 2013 072 046 - Notice of Completion & Environmental Document Transmittal of an Initial Study/Proposed Mitigated Negative Declaration for Santa Rosa Groundwater Master Plan, City of Santa Rosa, California

To Whom It May Concern:

2-1

The Colorado River Board of California (CRB) has received and reviewed a copy of the Notice of Completion & Environmental Document Transmittal of an Initial Study/Proposed Mitigated Negative Declaration for Santa Rosa Groundwater Master Plan, City of Santa Rosa, California. At this juncture, the CRB has determined that it has no comments regarding the Notice. If you have any questions, please feel free to contact Dr. Jay Chen at (818) 500-1625.

Sincerely,

A handwritten signature in black ink, appearing to read "Tanya Trujillo".

Tanya M. Trujillo
Executive Director

cc: Ms. Jennifer Burke, Deputy Director, Environmental Services, City of Santa Rosa

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
 For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SB-013072046

Project Title: City of Santa Rosa Groundwater Master Plan
 Lead Agency: City of Santa Rosa Contact Person: Jennifer Burke
 Mailing Address: 4300 Llano Road Phone: (707) 543-3359
 City: Santa Rosa Zip: 95407 County: Sonoma

Project Location: County: Sonoma City/Nearest Community: Santa Rosa
 Cross Streets: The project encompasses the City of Santa Rosa's urban growth boundary Zip Code: varies
 Longitude/Latitude (degrees, minutes and seconds): " N / " W Total Acres:
 Assessor's Parcel No.: Multiple Section: Twp.: Range: Base:
 Within 2 Miles: State Hwy #: 12, 101 Waterways: Multiple
 Airports: Railways: SMART, NWP Schools: Multiple

Document Type:

CEQA: ☐ NOP ☐ Draft EIR ☐ NEPA ☐ NOI Other: ☐ Joint Document
☐ Early Cons ☐ Supplement/Subsequent EIR ☐ EA ☐ Final Document
☐ Neg Dec (Prior SCH No.) ☐ Draft EIS ☐ Other:
☒ Mit Neg Dec Other: STATE CLEARING HOUSE

Local Action Type:

☐ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☒ Other: GW Master Plan

Development Type:

☐ Residential: Units _____ Acres _____ ☐ Transportation: Type _____
☐ Office: Sq.ft. _____ Acres _____ Employees _____ ☐ Mining: Mineral _____
☐ Commercial: Sq.ft. _____ Acres _____ Employees _____ ☐ Power: Type _____ MW _____
☐ Industrial: Sq.ft. _____ Acres _____ Employees _____ ☐ Waste Treatment: Type _____ MGD _____
☐ Educational: _____ ☐ Hazardous Waste: Type _____
☐ Recreational: _____ ☐ Other: _____
☒ Water Facilities: Type groundwater wells MGD 8.4

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☐ Fiscal ☒ Recreation/Parks ☒ Vegetation
☒ Agricultural Land ☒ Flood Plain/Flooding ☒ Schools/Universities ☒ Water Quality
☒ Air Quality ☒ Forest Land/Fire Hazard ☒ Septic Systems ☒ Water Supply/Groundwater
☒ Archeological/Historical ☒ Geologic/Seismic ☒ Sewer Capacity ☒ Wetland/Riparian
☒ Biological Resources ☒ Minerals ☒ Soil Erosion/Compaction/Grading ☒ Growth Inducement
☐ Coastal Zone ☒ Noise ☒ Solid Waste ☒ Land Use
☒ Drainage/Absorption ☒ Population/Housing Balance ☒ Toxic/Hazardous ☒ Cumulative Effects
☐ Economic/Jobs ☒ Public Services/Facilities ☒ Traffic/Circulation ☐ Other:

Present Land Use/Zoning/General Plan Designation:

Citywide (varies)

Project Description: (please use a separate page if necessary)

The City of Santa Rosa Groundwater Master Plan would establish policies and strategies to manage the available groundwater resources in a sustainable manner for potential future beneficial uses. The Groundwater Master Plan contains a list of recommended policies, programs and projects required to meet the City's emergency groundwater supply needs now and in the future, including installation of emergency groundwater wells to provide an additional 8.4 million gallons per day of emergency groundwater capacity.

State Clearinghouse Contact:

(916) 445-0613

State Review Began:

7 - 22 - 2013

SCH COMPLIANCE

6 - 20 - 2013

Please note State Clearinghouse Number
 (SCH#) on all Comments

SCH#:

2013072046

Please forward late comments directly to the
 Lead Agency

AQMD/APCD 2/23

(Resources: 7/27)

Project Sent to the following State Agencies:

☒ Resources ☐ State/Consumer Svcs
☐ Boating & Waterways ☐ General Services
☐ Coastal Comm ☐ Cal EPA
☒ Colorado Rvr Bd ☐ ARB: Airport/Energy Projects
☐ Conservation ☐ ARB: Transportation Projects
☒ CDFW # 3 ☐ ARB: Major Industrial Projects
☐ Delta Protection Comm ☒ SWRCB: Div. Financial Assist.
☐ Cal Fire ☐ SWRCB: Wtr Quality
☒ Historic Preservation ☒ SWRCB: Wtr Rights
☒ Parks & Rec ☒ Reg. WQCB # 1
☐ Central Valley Flood Prot. ☐ Toxic Sub Ctrl-CTC
☐ Bay Cons & Dev Comm. ☐ Yth/Adlt Corrections
☒ DWR ☐ Corrections
☒ Cal EMA
☐ Resources, Recycling and Recovery
☐ Bus Transp Hous ☐ Independent Comm
☐ Aeronautics ☐ Energy Commission
☒ CHP ☒ NAHC
☒ Caltrans # 4 ☒ Public Utilities Comm
☐ Trans Planning ☐ State Lands Comm
☐ Housing & Com Dev ☐ Tahoe Rgl Plan Agency
☐ Food & Agriculture
☒ Public Health ☐ Conservancy
☐ Other:

1-1
cont'd

→ NO Comments!

Response to Comment Letter 2: Colorado River Board of California

Response to Comment 2-1

The Colorado River Board of California has no comments regarding the notice. The City thanks the Board for their review.

EDMUND G. BROWN JR.
GOVERNORMATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION**State Water Resources Control Board**

AUG 20 2013

In Reply Refer to:
EGP:266.0

Ms. Jennifer Burke
City of Santa Rosa
Sonoma County
4300 Llano Road
Santa Rosa, CA 95407

Dear Ms. Burke:

**NOTICE OF COMPLETION FOR MITIGATED NEGATIVE DECLARATION FOR THE CITY OF
SANTA ROSA GROUNDWATER MASTER PLAN (SCH # 2013072046) IN SONOMA COUNTY**

3-1 State Water Resources Control Board (State Water Board), Division of Water Rights (Division) staff has reviewed the notice and Mitigated Negative Declaration for the subject project. These documents discuss installation of emergency groundwater wells in the proximity of the Russian River. The City of Santa Rosa should contact the Division to determine whether a water right permit or other water right approval is needed for these wells. Water appropriated from a subterranean stream flowing in a known and definite channel is subject to the permitting authority of the State Water Board. Information on water rights and the permitting process can be found on the Division's website at: <http://www.waterboards.ca.gov/waterrights/>. In addition, information describing the defining characteristics of subterranean streams can be found at www.waterboards.ca.gov/waterrights/board_info/docs/criteria_substream.pdf and www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2003/wro2003-04.pdf.

3-2 The State Water Board will act as a responsible agency if a water right permit is required. Accordingly, the State Water Board may need to rely on the City's CEQA document for this project or subsequent projects to support the permitting process. The City should therefore ensure that any CEQA document prepared for projects requiring water right approvals consider all potential direct and indirect environmental impacts associated with the diversion and use of water.

3-3 If you have any questions, please contact Beth Payne at (916) 341-5426 or by email at Elizabeth.Payne@waterboards.ca.gov. Written correspondences or inquiries should be addressed as follows: State Water Resources Control Board, Division of Water Rights, Attn: Beth Payne, P.O. Box 2000, Sacramento, CA, 95812-2000.

Sincerely,

ORIGINAL SIGNED BY:

Katy Lee, Senior
Russian River Watershed Unit
Division of Water Rights

ecc: Ms. Jennifer Burke
jburke@srcity.org

FELICIA MARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE DIRECTOR

Responses to Comment Letter 3: State Water Resources Control Board

Response to Comment 3-1

This comment recommends that the City contact the State Water Resources Control Board (SWRCB) Division of Water Rights to determine if a water right permit or other water right approval is necessary for the Plan's emergency groundwater wells in the proximity of the Russian River, and provides information on water rights and permitting.

To respond substantively to this question, the City consulted with a professional water resources engineer and water counsel. Figures 2 and 4, on pages 6 and 15 of the IS/Proposed MND, identify the locations within which the proposed wells would be sited and the relevant groundwater basins and sub-basins. Well sites would be more than eight miles away from the Russian River. The review took into consideration the hydrogeology of the aquifers from which water is to be pumped, and applicable law including the four-part test endorsed by the SWRCB in Order WRO 2003-0004, the appellate court ruling addressing a challenge to that order, *North Gualala Water Company v SWRCB* (2006) 139 Cal. App.4th 1577, as well as applicable principles of hydrogeology and California water rights. The conclusion is that the water to be extracted by the wells proposed by this project is true percolating groundwater. This is outside of the SWRCB permitting jurisdiction. Therefore, no water right permit would be required.

Response to Comment 3-2

This comment states that the SWRCB will act as a responsible agency if a water right permit is required, and therefore may need to rely on the project's IS/Proposed MND to support the permitting process.

As described in Response to Comment 3-1, a water right permit would not be required and therefore the SWRCB would not be required to act as a responsible agency for the Project.

Response to Comment 3-3

This comment provides contact information for the SWRCB.

The City thanks the SWRCB for their comments and contact information.

~~STATE OF CALIFORNIA - CALIFORNIA STATE TRANSPORTATION AGENCY~~~~EDMUND G. BROWN Jr., Governor~~**DEPARTMENT OF TRANSPORTATION**

111 GRAND AVENUE
P.O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-6053
FAX (510) 286-5559
TTY 711
www.dot.ca.gov



*Flex your power!
Be energy efficient!*

August 19, 2013

SON-GEN
SONGEN159
SCH #2013072046

Ms. Jennifer Burke
Utilities Department
City of Santa Rosa
4300 Llano Road
Santa Rosa, CA 95407

Dear Ms. Burke:

Santa Rosa Groundwater Master Plan Project – Mitigated Negative Declaration

4-1 Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Santa Rosa Groundwater Master Plan Project. The following comments are based on the Mitigated Negative Declaration (MND) we received on July 22, 2013. As the lead agency, the City of Santa Rosa is responsible for all project mitigation, including any needed improvements to State highways. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. This information should also be presented in the Mitigation Monitoring and Reporting Plan of the environmental document. Required roadway improvements should be completed prior to issuance of the Certificate of Occupancy. Since an encroachment permit is required for work in the State right of way (ROW), and Caltrans will not issue a permit until our concerns are adequately addressed, we strongly recommend that the City of Santa Rosa work with both the applicant and the Department to ensure that our concerns are resolved during the California Environmental Quality Act (CEQA) process, and in any case prior to submittal of a permit application. Further comments will be provided during the encroachment permit process.

Geotechnical Design

4-2 On, page 26, of the MND, Mitigation Measures AES-1: Emergency Well Siting Near State-Designated Scenic Highway 12 should be reviewed by Caltrans's Geotechnical office since the emergency wells may be established within 200 feet of State Route (SR) 12 between Danielli Avenue and Pythian Drive, and the construction of the emergency well involves excavation, grading, and drilling.

Ms. Jennifer Burke/City of Santa Rosa
August 19, 2013
Page 2

Comment Letter #4
cont'd

- 4-3 On page 55, section V. c) Paleontological or Unique Geological Resources – Less than Significant with Mitigation, states that the potential impacts to paleontological resources to be significant, given the potential for unanticipated discoveries to occur during ground-disturbing construction activities. Please clarify the contradiction.

Also page 55 says that the Santa Rosa General Plan shows no paleontological resources in the area. However, parts of Santa Rosa are covered by Glen Ellen and Wilson Grove formations, which include paleontological resources. Please update text to reflect this information.

- 4-4 On page 57, section VI. a.ii) Strong Ground Shaking – Less than significant, states that the project sites are likely to be exposed to ground shaking. Please be aware that Projects that require a special design to mitigate seismic shaking should be considered "Less than Significant with Mitigation".

- 4-5 On page 59, Mitigation Measures GEO-2: Reduce Risk of Damage from Unstable Soils; the CEQA questionnaire on page 56, and the text on page 59 on soil expansiveness are inconsistent. This should be considered "Less than Significant with Mitigation".

Highway Operations

- 4-6 On page 59, Mitigation Measures TR-1: Traffic Control Plan, please be aware that any work that affects the traffic flow on U.S. Highway 101 (US-101) or SR 12 must be approved by and coordinated with Caltrans.

Encroachment Permit

- 4-7 Please be advised that work that encroaches onto the State ROW requires an encroachment permit that is issued by Caltrans. To apply, a completed encroachment permit application, environmental documentation, and five (5) sets of plans, clearly indicating State ROW, must be submitted to: Office of Permits, California DOT, District 4, P.O. Box 23660, Oakland, CA 94623-0660. Traffic-related mitigation measures will be incorporated into the construction plans during the encroachment permit process. See the following website link for more information:
<http://www.dot.ca.gov/hq/traffops/developserv/permits/>

- 4-8 Please feel free to call or email Luis Meléndez of my staff at (510) 286-5606 or Luis_Melendez@dot.ca.gov with any questions regarding this letter, as for any other assistance we may provide.

Sincerely,



ERIK ALM, AICP
District Branch Chief
Local Development - Intergovernmental Review

c: State Clearinghouse

Responses to Comment Letter 4: California Department of Transportation (Caltrans)

Response to Comment 4-1

In this comment, Caltrans discusses the potential need for fair share contribution, financing, scheduling, implementation responsibilities, and lead agency monitoring to be discussed in proposed mitigation measures, as well as presented in the Mitigation Monitoring and Reporting Plan. The comment also provides information on other regulatory requirements, including encroachment permits.

Although very unlikely, the Groundwater Master Plan facilities may need to be installed within Caltrans facilities or right-of-way (ROW). Because the Groundwater Master Plan is a plan, it does not identify specific locations for any facilities at this time. Specific locations will be identified at a later date.

Mitigation Measure TR-1, Traffic Control Plan, requires that a traffic control plan for construction activities be prepared in accordance, in part, with Caltrans standards (i.e., the current edition of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones). Implementation of this mitigation measure would reduce impacts on the performance of the circulation system, including Caltrans facilities, to less-than-significant levels.

Given the nature of the facilities contemplated in the MND, a Certificate of Occupancy would not be required. The IS/Proposed MND indicates in Table PD-4 on page 22 that a Caltrans encroachment permit would be required for project work in a State roadway or right-of-way.

With regard to fair share contributions, the City would apply for applicable permits (e.g., encroachment permit) in cases where project construction or facilities would be within the Caltrans ROW. No mitigation measures warrant inclusion of fair share funding with Caltrans, as the City will be responsible for funding and implementing the mitigation measures.

Response to Comment 4-2

The comment states that Mitigation Measure AES-1, Emergency Well Siting Near State-Designated Scenic Highway 12, should be reviewed by Caltrans' Geotechnical office because emergency wells may be established within 200 feet of Highway 12, and construction would include excavation, grading, and drilling.

The Groundwater Master Plan includes the potential installation of emergency wells throughout the City's Urban Growth Boundary; because it is a plan, specific locations for these facilities have not been identified at this time. The MND, as well as the Mitigation Monitoring Plan, requires implementation of Mitigation Measure AES-1, which requires the City to avoid locating emergency wells within 200 feet of Highway 12 between Danielli Avenue and Pythian Drive (the portion designated as a State-designated Scenic Highway) if feasible. If emergency wells are constructed within 200 feet of the Scenic Highway, design measures would be incorporated such that the facility would not detract from the scenic quality along Highway 12. Further, the City has developed Mitigation Measure GEO-1, Siting of Facilities to Avoid Alquist-Priolo Fault Zones, and Mitigation Measure GEO-2, Reduce Risk of Damage from Unstable Soils, Liquefaction, Landslides and Slope Stability, and Expansive Soils. These mitigation measures would require a geotechnical study that evaluates soil or geologic problems that would affect site stability and structural integrity, and would reduce the potential for geologic hazards to the Caltrans facility. No change to Mitigation Measure AES-1 is warranted.

Response to Comment 4-3

This comment claims that Impact V. c) Paleontological or Unique Geological Resources is contradictory because while it is determined to be less than significant with mitigation, the text claims that potential impacts to paleontological resources are significant, given the potential for unanticipated discoveries to occur during ground-disturbing construction activities. The comment also states that the Santa Rosa General Plan shows no paleontological resources in the area; however, parts of Santa Rosa are covered by Glen Ellen and Wilson Grove foundations, which include paleontological resources.

The analysis of Impact V. c) Paleontological or Unique Geological Resources, states that the Santa Rosa General Plan shows no *known* paleontological resources in the area. The less-than-significant-with-mitigation finding, as well as accompanying Mitigation Measure CR-4, Avoid or Document Unknown Paleontological Resources, concerns *unknown* paleontological resources which may be encountered during construction of any element of the City's Groundwater Master Plan, such as those which may be constructed over the Glen Ellen and Wilson Grove formations.

Response to Comment 4-4

This comment informs the City that projects requiring special design to mitigate seismic shaking should be considered "less than significant with mitigation," and the IS/Proposed MND determined that the project sites are likely to be exposed to ground shaking.

The City and the project are required by State law to comply with the latest edition of the California Building Code standards for earthquake resistant construction. These required engineering standards will, therefore, be incorporated into the design of future individual projects as a matter of law and are not required to be listed as mitigation measures.

Response to Comment 4-5

This comment claims that Mitigation Measure GEO-2, Reduce Risk of Damage from Unstable Soils, the CEQA checklist on page 56 of the IS/Proposed MND, and the text on page 59 of the IS/Proposed MND relating to soil expansiveness are inconsistent, and the determination should be "less than significant with mitigation."

The discussion related to expansive soils is consistently presented as significant but mitigable throughout Section VI. The checklist on page 56 indicates a Less than Significant with Mitigation determination for impact VI. d), which addresses expansive soils. The discussion on page 58 of the IS/Proposed MND evaluates the risk from expansive soils and determines that the placement of a new emergency well facility on expansive soils would be significant. Mitigation Measure GEO-2 includes measures that would reduce the risk from expansive soils to a less-than-significant level, and the paragraph following Mitigation Measure GEO-2 therefore concludes that impacts related to expansive soils would be less-than-significant level with mitigation.

However, the City notes that the title of Mitigation Measure GEO-2 could be improved to indicate its applicability to reducing risk from expansive soils, liquefaction, landslides and slope stability, as well as unstable soils. Therefore, Mitigation Measure GEO-2, on page 59 of the IS/Proposed MND is revised as follows:

Mitigation Measure GEO-2: Reduce Risk of Damage from Unstable Soils, Liquefaction, Landslides and Slope Stability, and Expansive Soils

If emergency well facilities are constructed in areas with slopes exceeding ten percent, as shown on Figure 7-3 of the Santa Rosa General Plan 2035, or in areas of high liquefaction potential, as shown on USGS Open File Report 06-1037, Liquefaction Susceptibility, or in an area with soils with high shrink-swell potential, as indicated in the Sonoma County Soil Survey, then the City shall require a design-level geotechnical study be prepared for the emergency well facility. Such well facilities shall be designed and constructed in conformance with the specific recommendations contained in the design-level geotechnical study, including recommendations for grading, ground improvement, and foundation support. The recommendations made in the geotechnical study shall be incorporated into the final plans and specifications and implemented during construction. The geotechnical study shall identify and propose measures for any soils or geological problems that may affect site stability or structural integrity, including landslide risk, liquefaction potential, seismically-induced landsliding, or weak and expansive soils. This may include, but would not be limited to, one or more of the following:

- Removal and replacement of unstable materials in an existing landslide or in an actively eroding area with a stronger material.
- Retaining walls or other external applications to strengthen slopes.
- Removal of native soil and replacement with an engineered fill material not prone to shrinking and swelling or liquefaction.
- Soil stabilization, such as lime treatment to alter soil properties to reduce shrink-swell potential to an acceptable level

Page 84 of the IS/Proposed MND is also revised as follows:

Mitigation Measure GEO-2: Reduce Risk of Damage from Unstable Soils, Liquefaction, Landslides and Slope Stability, and Expansive Soils

See discussion in VI, Geology and Soils a.iii, a.iv, c, and d for a description of this mitigation measure.

Response to Comment 4-6

This comment informs the City that any work affecting the traffic flow on U.S. 101 or Highway 12 must be approved by and coordinated with Caltrans.

Although very unlikely, Groundwater Master Plan facilities may need to be installed within Caltrans facilities or ROW. Because the GWMP is a plan, it does not identify specific locations for any facilities at this time. Specific locations will be identified at a later date. In the event that Caltrans facilities could be affected by implementation of the City's Groundwater Master Plan, Mitigation Measure TR-1, Traffic Control Plan, requires that a traffic control plan for construction activities be prepared in accordance, in part, with Caltrans standards (i.e., the current edition of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones, which requires approval of a traffic control plan by the Engineer of the public agency or authority having jurisdiction over the highway). Therefore, if Groundwater Master Plan facilities are installed within Caltrans facilities or ROW, the Traffic Control Plan would be submitted to Caltrans for approval.

Response to Comment 4-7

This comment informs the City that work encroaching into the State right-of-way requires an encroachment permit, and provides application information and requirements.

Table PD-4 in the IS/Proposed MND indicates that a Caltrans encroachment permit would be required for project work or operation in a State roadway or right-of-way. The City thanks Caltrans for providing information on its encroachment permitting process.

Response to Comment 4-8

This comment includes contact information for Caltrans.

The City thanks Caltrans for its comments and contact information.

From: [Chelsea Phlegar](#)
To: [Chelsea Phlegar](#)
Subject: Santa Rosa Groundwater Master Plan Project Site Plan Request
Date: Friday, August 23, 2013 12:58:27 PM

From: Luis Melendez [<mailto:luis.melendez@dot.ca.gov>]
Sent: Tuesday, July 30, 2013 3:17 PM
To: Burke, Jennifer
Cc: Erik Alm
Subject: Santa Rosa Groundwater Master Plan Project Site Plan Request

Dear Ms. Burke,

5-1

Our office received the Mitigated Negative Declaration for the Santa Rosa Groundwater Master Plan Project. We are requesting a copy of the Site Plan for our review so that we can determine where possible encroachments on State Highway right-of-way may occur. For instance, Master Plan activities might include upgrades to pipes that traverse State facilities.

We look forward to reviewing the site plan. Thank you in advance.

Sincerely,

Luis B. Meléndez
Transportation Planner
Local Development - Intergovernmental Review
Office of Transit and Community Planning
Caltrans - District 4
111 Grand Avenue, MS 10-D
Oakland, CA 94623

This e-mail has been scanned for viruses by MessageLabs.

Responses to Comment Letter 5: California Department of Transportation (Caltrans) email

Response to Comment 5-1

This comment requests a copy of a site plan, in relation to the State highway system, for reviewing and determining locations of possible encroachments to the State right-of-way (e.g., upgrades to pipelines that traverse State facilities).

The Groundwater Master Plan includes the potential installation of emergency wells throughout the City's Urban Growth Boundary; because it is a plan, specific locations for these facilities have not been identified at this time. The IS/Proposed MND includes an evaluation of potential issues associated with installation of wells and well facilities near Highway 12. The IS/Proposed MND indicates in Table PD-4 on page 22, the need for encroachment permits from Caltrans should the City need to construct or operate facilities in a State roadway or ROW. If an encroachment permit is needed, a site plan would be submitted at that time.



DRY CREEK RANCHERIA
BAND OF POMO INDIANS

August 16, 2013

Brian Bacciarini
GHD Inc.
2235 Mercury Way, Suite 150
Santa Rosa, CA 95407

Re: City of Santa Rosa Groundwater Master Plan – Ref: 8410080

Dear Mr. Bacciarini:

6-1

Thank you for the notification of the above named project in your letter dated August 8, 2013 (copy attached.) We have every confidence that the City of Santa Rosa will continue to inform the Dry Creek Rancheria Band of Pomo Indians of any findings where any cultural resources would be adversely affected by the proposed undertaking. We believe that this particular area would have been highly conducive for some kind of land utilization by Native American people. There is great potential that Native American artifacts and culturally modified soils may be present on exposed ground, however there is a greater potential that during underground trenching, cultural materials will be discovered.

It is on this basis that we require full involvement of a tribal monitor in all phases of planning, implementation and mitigation of the proposed project.

Regards,

Harvey Hopkins, Chairman
DRY CREEK RANCHERIA BAND OF POMO INDIANS

Cc: Dry Creek Rancheria Board of Directors
Gus Pina, Tribal Administrator
Lori Leach, Support Services Director
Attachment



Mailing Address: P.O BOX 607, Geyserville, CA 95441
Office Address: 3250 Highway 128 East, Geyserville, CA 95441
Phone/Fax: 707-522-4233

Response to Comment Letter 6: Dry Creek Rancheria Band of Pomo Indians

Response to Comment 6-1

The Dry Creek Rancheria Band of Pomo Indians requests to remain informed of any findings that indicate adverse effects to cultural resources due to the project. The comment also states that the Tribe requests involvement in all phases of planning, implementation, and mitigation of the Santa Rosa Groundwater Master Plan.

The City appreciates the Tribe's interest in the project. In response to this request, Mitigation Measure CR-2, Identify and Avoid or Minimize Impacts to Archaeological Resources, on page 54 of the IS/Proposed MND is revised as indicated in Response to Comment 8-3.

After notification to the Tribe of the siting of specific project improvements and the records search information for the location (as required by the additions to Mitigation Measure CR-2), the City would be glad to coordinate with the Tribe regarding their further interests in participating in the planning and implementation of mitigation for the project facilities.

From: Gillian Hayes
Sent: Thursday, August 15, 2013 12:27 PM
To: 'brianbacciarini@ghd.com'
Cc: Devin Chatoian; Lorelle Ross; 'mprinz@srcity.org'
Subject: Santa Rosa Ground Water Master Plan

Brian,

7-1

Thank you for the referral regarding Santa Rosa's Groundwater Masterplan. The Tribe is interested in having government to government consultation regarding this project. We are concerned with the historic, prehistoric and cultural sites identified within the plan area and the ground disturbance involved for potential future emergency groundwater wells. The Tribe is interested in coordinating with the City during conceptual site selection and planning of emergency well sites and drilling in order to avert any impacts to resources.

Please direct related correspondence regarding this project to myself. Thank you for your time. We look forward to working with you.

Regards,

Gillian Hayes

Gillian Hayes

Deputy Director

Environmental & Cultural Preservation Dept

Federated Indians of Graton Rancheria

6400 Redwood Drive, Suite 300

Rohnert Park, CA 94928

(707) 566-2288, ext 117

www.gratonrancheria.com



please consider our environment before printing this email.

Federated Indians of Graton Rancheria and Tribal TANF of Sonoma & Marin - Proprietary and Confidential

CONFIDENTIALITY NOTICE: This transmittal is a confidential communication or may otherwise be privileged. If you are not the intended recipient, you are hereby notified that you have received this transmittal in error and that any review, dissemination, distribution or copying of this transmittal is strictly prohibited. If you have received this communication in error, please notify this office at 707-566-2288, and immediately delete this message and all its attachments, if any. Thank you.

This e-mail has been scanned for viruses by MessageLabs.

Response to Comment Letter 7: Federated Indians of Graton Rancheria

Response to Comment 7-1

The Federated Indians of Graton Rancheria is interested in engaging in government-to-government consultation on the Project and in coordinating with the City on the emergency well sites and drilling, in order to avert impacts to cultural resources.

The City appreciates the Tribe's interest in the project. In response to this request, Mitigation Measure CR-2, Identify and Avoid or Minimize Impacts to Archaeological Resources, on page 54 of the IS/Proposed MND is revised as indicated in Response to Comment 8-3.

After notification to the Tribe of the siting of specific project improvements and the records search information for the location (as required by the additions to Mitigation Measure CR-2), the City would be glad to coordinate with the Tribe regarding their further interests in participating in the planning and implementation of mitigation for the project facilities.



August 29, 2013
 Brian Bacciarini
 GHD
 2235 Mercury Way
 Santa Rosa, CA 95407

Jennifer Burke
 City of Santa Rosa
 4300 Llano Road
 Santa Rosa, CA 95407

Dear Mr. Bacciarini and Ms. Burke,

Thank you for the referral regarding Santa Rosa's Groundwater Master Plan development and the follow up information about the Mitigated Negative Declaration. The Federated Indians of Graton Rancheria ancestral territory encompasses all of Marin County and the southern half of Sonoma County. The Tribe is interested in having government to government consultation regarding this project that falls within the ancestral territory and may impact cultural resources. The following comments relate to the GWMP Mitigated Negative Declaration:

8-1

1. Pg. 14:

Second paragraph, the previous projects in the table above are exempted from CEQA as explained. The remaining projects in Table PD-3 (GW-A-005 – GW-C-002) are not addressed in regards to CEQA analysis and would seem to require it. This is not addressed in the detailed explanation of the well drilling process or in section '1.6 City Entitlements and Other Public Agencies Whose Approval is Required.' Please clarify future CEQA requirements on the remaining proposed projects and well drilling.

8-2

2. Pg. 54:

The following comments are suggested changes to the mitigation language for cultural resources:

Mitigation Measure CR-2: Identify and Avoid or Minimize Impacts to Archaeological Resources

Prior to ground-disturbing activities, a literature and archival records search shall be conducted with the Northwest Information Center to identify known archaeological resources within the Project facility/proposed project vicinity. If archaeological resources are located within the vicinity of the Project site, then a qualified archaeologist shall be retained to perform an evaluation of the potential resource and to consult with the tribe. If the resource is determined to qualify as an archaeological resource for purposes of CEQA (CEQA Guidelines Section 15064.5(c)) and the proposed Project facility would have the potential to adversely effect-affect the resource, such impacts to the archaeological resource shall be avoided and the archeologist shall consult with the tribe(s) in the area and make recommended mitigation measures on how to avoid such resource. The improvement shall be designed, constructed, and operated to avoid material impairment of the resource. Mitigation Measures may include, for example, temporary protective barriers, construction worker training, Native American monitoring, or movement relocation of the proposed facility. A Tribal Treatment Plan covering reburial of human remains, disposition of the artifacts and other cultural resources should be drafted and signed by all parties. If archaeological materials are encountered during construction activities, the piece of equipment that encounters the materials all construction in the immediate vicinity shall be stopped/halted, and until the find is inspected by a qualified archaeologist. Project personnel shall not collect cultural materials. If the archaeologist determines that the find potentially qualifies as a unique archaeological resource for purposes of CEQA (CEQA Guidelines Section 15064.5(c)(3)), all work must be remain stopped in the immediate vicinity to allow the archaeologist to evaluate any materials and recommend appropriate

8-3

8-3
cont'd

treatment. Such treatment and resolution shall be consistent with Public Resources Code 21083.2 and may include either modifying the Project to allow the materials to be left in place or undertaking data recovery of the materials in accordance with standard archaeological methods and shall be in consultation with the tribe(s) from which the resources originated, according to the Native American Heritage Commission. The preferred treatment of the resource is protection and preservation. Mitigation Measure CR-2 shall be noted on any construction plans for the project and in any construction contracts related to the project.

8-4

Mitigation Measure CR-3: Procedures for Encountering Human Remains

California Health and Safety Code Section 7050.5 states that it is a misdemeanor to knowingly disturb a human grave. If human graves are encountered, the City and its Contractor shall ensure that work shall halt in the vicinity and the County Coroner shall be notified. At the same time, a qualified archaeologist shall be contacted to evaluate the situation. If human remains are of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of identification, pursuant to Public Resources Code 5097.98. The Native American Heritage Commission will identify the person or persons most likely descended from the deceased. The lead agency shall notify the tribe(s) and coordinate with them regarding the Most Likely Descendant and preferred treatment of the remains with appropriate dignity. Mitigation Measure CR-3 shall be noted on any construction plans for the project and in any construction contracts related to the project.

8-5

Mitigation Measure CR-2 would reduce the impact to archaeological resources that may be encountered during construction by protecting, preserving, or appropriately recovering any significant resources. Mitigation Measure CR-3 would reduce the impact from discovery of human remains by providing standard procedures in the event that human remains are encountered and requiring adherence to Public Resources Code Section 5097.98 requiring Native American tribal notification. The impact to potentially unknown archaeological resources or human remains following in accordance with the mitigations above would be less than significant.

8-6

3. The Tribe is concerned with the historic, prehistoric and cultural sites identified within the plan area and the ground disturbance involved for potential future emergency groundwater wells. The Tribe is interested in coordinating with the City during conceptual site selection and planning of emergency well sites and drilling, as well as throughout the CEQA process for each site in order to avert any impacts to cultural resources.

4. In the future, please include the tribe in any public hearing noticing for this project and all environmental document postings and noticing for all projects proposed from your department. The referral from the Native American Heritage Commission triggers the noticing of the Intent to Adopt a Mitigated Negative Declaration on this project, as a trustee Agency, as does the original email of interest regarding the project dated August 15, 2013.

Thank you for your time in reviewing these comments. Please direct related correspondence to:

Gillian Hayes, Deputy Director of Environmental and Cultural Preservation Department
Graton Rancheria
6400 Redwood Drive Suite 300
Rohnert Park, CA 94928
(707) 566-2288 ext 117
ghayes@gratonrancheria.com

8-7

Thank you for your time. We look forward to working with you.
Sincerely,



Lorelle Ross, Tribal Vice Chair

Response to Comment Letter 8: Federated Indians of Graton Rancheria

Response to Comment 8-1

The City appreciates the Tribe's interest in the project and understands the request for government to government consultation regarding the project and the Mitigated Negative Declaration.

Response to Comment 8-2

The proposed Groundwater Master Plan includes the potential installation of emergency wells throughout the City's Urban Growth Boundary; because the Groundwater Master Plan is a plan, specific locations for facilities have not been identified at this time. The specific well facilities listed in Table PD-3 (GW-A-005 through GW-C-002) are proposed as part of the Plan, but the location of these well facilities, aside from their general location within a Water System Operational Master Zone, is not known at this time. Therefore, environmental impacts of the construction and operation of these proposed facilities listed in Table PD-3 have been evaluated in the MND as though such facilities might be located anywhere within the City's Urban Growth Boundary. Please refer to Section 1.2 CEQA Requirements of the Draft IS/Proposed Mitigated Negative Declaration on page 3, which explains:

As provided in Section 15146 of the CEQA Guidelines, the degree of specificity required in a CEQA document will correspond to the degree of specificity involved in the underlying activity which is described in that document. The evaluation of environmental impacts of the Groundwater Master Plan will focus on the effects that can be expected to follow from the adoption of such a plan, but this Initial Study/Proposed MND need not be as detailed as the CEQA document on the specific construction projects that may follow. Implementation of some individual projects may require project-specific environmental review if it is determined that such projects could have site-specific environmental impacts beyond those effects analyzed in this Initial Study, as provided for in Section 15162 of the CEQA Guidelines, Subsequent EIRs and Negative Declarations.

Response to Comment 8-3

The Tribe's comment letter provides suggested changes to Mitigation Measure CR-2. In response to this request, Mitigation Measure CR-2, Identify and Avoid or Minimize Impacts to Archaeological Resources, on page 54 of the IS/Proposed MND is revised as follows:

Mitigation Measure CR-2: Identify and Avoid or Minimize Impacts to Archaeological Resources

Prior to ground-disturbing activities, a literature and archival records search shall be conducted with the Northwest Information Center to identify known archaeological resources within the vicinity of the Project facility. If archaeological resources are located within the vicinity of the Project site, then a qualified archaeologist shall be retained to perform an evaluation of the potential resource. If the resource is determined to qualify as an archaeological resource for purposes of CEQA (CEQA Guidelines Section 15064.5(c)) and the Project facility has the potential to ~~would~~ adversely affect the resource, such impacts to the archaeological resource shall be avoided. The improvement shall be designed, constructed, and operated to avoid material impairment of the resource. Measures may include, for example, temporary protective barriers, construction worker training, Native American monitoring, or movement of the facility. The City shall notify interested Native American tribes of the siting of specific project facilities, the records search results obtained for each of them, and consult with interested tribes regarding the measures recommended for avoidance of known resources.

If archaeological materials are encountered during construction activities, ~~the piece of equipment that encounters the materials~~ construction in the immediate vicinity shall be stopped, ~~and until~~ the find is inspected by a qualified archaeologist. Project personnel shall not collect cultural materials. If the archaeologist determines that the find potentially qualifies as a unique archaeological resource for purposes of CEQA (CEQA Guidelines Section 15064.5(c)(3)), all work must ~~be~~ remain stopped in the immediate vicinity to allow the archaeologist to evaluate any materials and recommend appropriate treatment. The City shall notify interested Native American tribes of such discoveries and consult with the tribe from which the resources originated, according to the Native American Heritage Commission. Such treatment and resolution shall include either modifying the Project to allow the materials to be left in place or undertaking data recovery of the materials in accordance with standard archaeological methods. The preferred treatment of the resource is protection and preservation.

After notification to the Tribe of the siting of specific project improvements and the records search information for the location (as required by the additions to Mitigation Measure CR-2), the City would be glad to coordinate with the Tribe regarding their further interests in participating in the planning and implementation of mitigation for the project improvement.

The comment also requests that a Tribal Treatment Plan be prepared regarding reburial of human remains. This request has been incorporated into changes in Mitigation Measure CR-3, Procedures for Encountering Human Remains under Response to Comment 8-4 below.

The comment also requests that Mitigation Measure CR-2 be noted on any construction plans for the project and in any construction contracts related to the project. Placement of cultural resources mitigation measures in every plan and contract is not an efficient way to communicate such instructions to the appropriate contractors. Instead, the City's Mitigation Monitoring Plan indicates that the requirements of Mitigation Measure CR-2 must be incorporated into the plans and specifications for project facilities. The City is committed to implementation of the Mitigation Monitoring Plan.

Response to Comment 8-5

The tribe requests changes to Mitigation Measure CR-3, to include requirements which are already part of California law. In response to this request, Mitigation Measure CR-3, Procedures for Encountering Human Remains, on page 57 of the IS/Proposed MND is revised as follows:

Mitigation Measure CR-3: Procedures for Encountering Human Remains

California Health and Safety Code Section 7050.5 states that it is a misdemeanor to knowingly disturb a human grave. If human graves are encountered, the City and its Contractor shall ensure that work shall halt in the vicinity and the County Coroner shall be notified. At the same time, a qualified archaeologist shall be contacted to evaluate the situation. If human remains are of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of identification, pursuant to Public Resources Code 5097.98. The Native American Heritage Commission will identify the person or persons most likely descended from the deceased. The City shall notify the tribe(s) and coordinate with them regarding the Most Likely Descendant and preferred treatment of the remains with appropriate dignity. A Tribal Treatment Plan covering reburial of human remains and disposition of the artifacts and other cultural resources should be agreed to by all parties.

The comment also requested that Mitigation Measure CR-3 be noted on any construction plans for the project and in any construction contracts related to the project. Placement of cultural resources mitigation

measures in every plan and contract is not an efficient way to communicate such instructions to the appropriate contractors. Instead, the City's Mitigation Monitoring Plan indicates that the requirements of Mitigation Measure CR-3 must be incorporated into the plans and specifications for project facilities.

Response to Comment 8-5

The Tribe's comment letter suggests changes to the text of the MND which explain why Mitigation Measures CR-2 and CR-3 would be effective at reducing impacts to less than significant. The City agrees with the changes, but does not find them substantial enough to warrant changes to the text of the MND.

Response to Comment 8-6

The Tribe's comments letter requests coordination with the Tribe during conceptual site selection and planning of emergency well sites and drilling, as well as throughout the CEQA process for each site.

After notification to the Tribe of the siting of specific project improvements and the records search information for the location (as required by the additions to Mitigation Measure CR-2), the City would be glad to coordinate with the Tribe regarding their further interests in participating in the planning and implementation of mitigation for the project improvement. The City will notify the Tribe regarding any subsequent CEQA documents relative to the Groundwater Master Plan.

Response to Comment 8-7

The Tribe's comment letter requests notice of any public hearing for the project and for all environmental document postings and noticing for all projects proposed by the Utilities Department and provides contact information for the Tribe.

A notice of this Mitigated Negative Declaration and the public hearing will be sent to the Tribe. A public hearing for the proposed Groundwater Master Plan and Mitigated Negative Declaration is tentatively scheduled before the Santa Rosa Board of Public Utilities on Thursday, September 19, 2013; the meeting begins at 1:30 pm. In addition, the Tribe's request for environmental document postings and noticing for all Utilities Department projects has been forwarded to the City Clerk for implementation in accordance with CEQA under Public Resources Code 21092.2(a).

3. Preparers

The following GHD team members prepared this Initial Study/Proposed MND.

Pat Collins

Project Director

Carrie Lukacic

Project Manager

Brian Bacciarini

Senior Environmental Scientist

Kristine Gaspar

Senior Environmental Planner

Chelsea Phlegar

Planner

Katherine Ross

Planner

Renee Remillard

Graphic Artist

Elissa Overton

Project Management Coordinator

The following subconsultants assisted in preparation of this Initial Study/Proposed MND.

Illingworth & Rodkin – Health Risk Screening Assessment and Noise and Vibration Assessment

James Reyff & Michael Thill

Sonoma State University – Anthropological Studies Center – Cultural Resources

Michael Newland

Sandra Etchell Environmental and Wildlife Biology – Biology

Sandra Etchell

Appendix A – Initial Study/Proposed Mitigated Negative Declaration

SANTA ROSA GROUNDWATER MASTER PLAN

Initial Study/Proposed Mitigated Negative Declaration

Prepared for:



City of Santa Rosa Utilities Department
69 Stony Circle
Santa Rosa, CA 95401

Prepared By:



GHD Inc.
2253 Mercury Way, Suite 150
Santa Rosa, CA 95407

July 22, 2013

Table of Contents

1.	Project Information.....	1
1.1	Background and Need	2
1.2	CEQA Requirements	3
1.3	Project Location and Existing Setting	4
1.3.1	Local Groundwater Basins.....	4
1.3.2	Relation to Other Groundwater Studies and Plans	4
1.4	Existing Water Supply and Distribution System	7
1.4.1	Existing City Water Supplies.....	7
1.4.2	Water Distribution System Operation Master Zones.....	8
1.5	Project Description.....	8
1.5.1	Recommended Groundwater Management Policies and Actions	10
1.5.2	Recommended Groundwater Projects and Programs	12
1.6	City Entitlements and Other Public Agencies Whose Approval is Required	21
2.	Determination	23
3.	Environmental Effects of the Project.....	24
I.	AESTHETICS	24
II.	AGRICULTURE AND FOREST RESOURCES.....	28
III.	AIR QUALITY	31
IV.	BIOLOGICAL RESOURCES	37
V.	CULTURAL RESOURCES	52
VI.	GEOLOGY AND SOILS	56
VII.	GREENHOUSE GAS EMISSIONS	61
VIII.	HAZARDS AND HAZARDOUS MATERIALS.....	64
IX.	HYDROLOGY	70
X.	LAND USE AND PLANNING.....	85
XI.	MINERAL RESOURCES	87
XII.	NOISE.....	88
XIII.	POPULATION AND HOUSING	93
XIV.	PUBLIC SERVICES	94
XV.	RECREATION	95
XVI.	TRANSPORTATION / TRAFFIC	96
XVII.	UTILITIES AND SERVICE SYSTEMS	101
4.	Mandatory Findings of Significance	105

5. Preparers	109
6. References	110

Figures

Figure 1. Vicinity Map.....	7
Figure 2. Location of Major Groundwater Sub-basins	8
Figure 3. Operational Master Zones	11
Figure 4. Groundwater Project Locations	17
Figure 5. Estimated Drawdown West of Rodgers Creek Fault Zone	79
Figure 6. Estimated Drawdown East of Rodgers Creek Fault Zone	81

Tables

Table PD-1. Characteristics of Local Groundwater Basins/Sub-basins Underlying the City	6
Table PD-2. Water System Operational Master Zones	10
Table PD-3. Recommended Groundwater Projects and Programs	15
Table PD-4. Regulatory/Permitting Agencies.....	24
Table III-1. Criteria Air Pollutant Construction Emissions	35
Table IV-1. Special-Status Wildlife Species Potentially Occurring within the City's Urban Growth Boundary	42

1. Project Information

1. Project Title	Santa Rosa Groundwater Master Plan
2. Lead Agency Name & Address	City of Santa Rosa Utilities Department 69 Stony Circle Santa Rosa, CA 95401
3. Contact Person & Information	Jennifer Burke Deputy Director, Environmental Services Telephone number: (707) 543-3359 Email: jburke@srcity.org
4. Project Location	Santa Rosa, California. The City of Santa Rosa (City) is located approximately 50 miles north of San Francisco in central Sonoma County. Situated on the Santa Rosa Plain, the City is bounded by the foothills of the Sonoma Mountains to the east and the Laguna de Santa Rosa to the west. Highway 101 and State Route 12 divide the City into quadrants. Highway 101 is the north-south route connecting the San Francisco Bay Area to Mendocino and Humboldt Counties to the north. State Route 12 runs in an east-west direction, connecting the Sonoma coast to the Napa and Sonoma valleys to the east.
5. Project Sponsor's Name & Address	City of Santa Rosa Utilities Department 69 Stony Circle Santa Rosa, CA 95401
6. General Plan Designation	Citywide (varies)
7. Zoning	Citywide (varies)
8. Description of Project	The Groundwater Master Plan would establish City policies and strategies to manage the available groundwater resources in a sustainable manner for potential future beneficial uses. The Groundwater Master Plan also contains a list of recommended policies, programs and projects required to meet the City's emergency groundwater supply needs now and in the future.
9. Surrounding Land Uses and Setting	The Project encompasses the City of Santa Rosa's Urban Growth Boundary and would therefore involve various land uses and settings (residential neighborhoods, commercial areas, parks and open spaces, etc.).
10. Other Public Agencies Whose Approval may be Required	Please refer to Section 1.6 for a list of the regulatory/permitting agencies that may have permitting or approval authority over certain aspects of the Project.

1.1 Background and Need

The City is proposing to adopt a Groundwater Master Plan. The objectives of the Groundwater Master Plan are to provide strategies of how available groundwater resources can be most effectively used to meet the emergency supply needs of the City's existing and future customers. Specifically, the Project objectives are:

- To manage the available groundwater resources of the City;
- To develop an additional 8.4 million gallons per day (mgd) of emergency groundwater capacity;
- To develop emergency groundwater capacity in a manner that will facilitate provision of potable water supply throughout the City during short-term (2-day) and long-term (14-day) emergencies; and
- To identify policies, programs and policies to implement these objectives.

Prior to 1959, the City's water supply was primarily composed of groundwater, supplemented with surface water from Santa Rosa Creek impounded behind Lake Ralphine. In 1952, the City Council passed a resolution declaring its intention to contract with the Sonoma County Water Agency (SCWA) for a supply of Russian River water. In 1956, the City's Board of Public Utilities (BPU) authorized the issuance of Water Revenue Bonds to upgrade the water system to provide for the City's connection to the SCWA's Aqueduct, and in the late 1950's, the City began contracting with the SCWA for its water supply and its groundwater production facilities were put on standby for emergency purposes.¹

Many of the City's emergency groundwater supply wells drilled before 1959 are no longer in service due to age or other issues. Since 2003, the City has drilled eight test borings and constructed several test wells. In 2005, with the approval of the California Department of Public Health, the City converted two previous emergency wells (Farmers Lane Wells 1 and 2) to full-time production wells. As of July, 2013, the City has approximately 4.3 mgd of emergency water supply capability. This includes 3.2 mgd of potable water supply from Farmers Lane Wells 1 and 2, and approximately 1.1 mgd of emergency water supply from two emergency wells (Carley Well and Peters Springs Well). The City also has several out-of-service wells, including the City's Leete well, which is not operational due to a pump column issue.

In September 2003, the City Council directed staff to request the BPU to evaluate the development of local water supply. Subsequently, the BPU adopted Resolution No. 776 directing staff to:

- Pursue water resources to provide reliable water supply through the General Plan Building horizon;
- Develop local groundwater, additional recycled water, additional supplies from SCWA, and other sources as they become available; and
- Evaluate these water sources based on supply reliability, cost, timing, and environmental impact.

Shortly after the passage of Resolution No. 776, City staff developed an exploratory groundwater program to study the City's groundwater sub-basins, to establish a more thorough understanding of the City's hydrogeologic conditions, and to investigate and evaluate potential future emergency well sites.

¹ The California Department of Public Health regulates municipal groundwater supply wells, providing permits either for active, full-time potable water production wells or standby, emergency potable water wells. Emergency well permits limit operation to no more than five days at a time and 15 days total throughout the year.

In 2011, the City began preparation of a Groundwater Master Plan. The proposed Groundwater Master Plan identifies specific projects and programs that are recommended to be implemented over a 15-year horizon. It is the City's intent to review and update the Groundwater Master Plan every five years.

1.2 CEQA Requirements

This Project is subject to the requirements of the California Environmental Quality Act (CEQA). The City is the CEQA lead agency. Prior to making a decision to approve the Project, the City must identify and document the potential significant environmental effects of the Project in accordance with CEQA. This Initial Study/Proposed Mitigated Negative Declaration (MND) has been prepared under the direction of the City to fulfill the CEQA requirements.

As provided in Section 15146 of the CEQA Guidelines, the degree of specificity required in a CEQA document will correspond to the degree of specificity involved in the underlying activity which is described in that document. The evaluation of environmental impacts of the Groundwater Master Plan will focus on the effects that can be expected to follow from the adoption of such a plan, but this Initial Study/Proposed MND need not be as detailed as the CEQA document on the specific construction projects that may follow. Implementation of some individual projects may require project-specific environmental review if it is determined that such projects could have site-specific environmental impacts beyond those effects analyzed in this Initial Study, as provided for in Section 15162 of the CEQA Guidelines, Subsequent EIRs and Negative Declarations.

This Initial Study/Proposed MND will be circulated for public and agency comment for 30 days from July 22, 2013 to August 21, 2013. Written comments may be e-mailed, delivered, or mailed to the following address until close of business on August 21, 2013:

Jennifer Burke, Deputy Director, Environmental Services
City of Santa Rosa Utilities Department
4300 Llano Road
Santa Rosa, CA 95407
Email: jburke@srcity.org

This Initial Study/Proposed MND is intended to satisfy the requirements of CEQA (Public Resources Code, Div 13, Sec 21000-21177), and the State CEQA Guidelines (California Code of Regulations, Title 14, Sec 15000-15387). CEQA encourages lead agencies and applicants to modify their projects to avoid significant adverse impacts.

Section 15063(d) of the State CEQA Guidelines states the content requirements of an Initial Study as follows:

15063(d) Contents. An Initial Study shall contain in brief form:

- (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.

1.3 Project Location and Existing Setting

The City is located approximately 50 miles north of San Francisco in central Sonoma County (see Figure 1, Vicinity Map). The Project encompasses the City's Urban Growth Boundary. The City's Urban Growth Boundary overlies portions of two groundwater basins: 1) the Santa Rosa Valley Groundwater Basin (including the Santa Rosa Plain Sub-basin and the Rincon Valley Sub-basin); and 2) the Kenwood Valley Groundwater Basin. Figure 2 shows the City's Urban Growth Boundary and underlying groundwater basins and sub-basins, which are discussed further below.

1.3.1 Local Groundwater Basins

The City's existing groundwater supply is derived exclusively from the Santa Rosa Plain Sub-basin of the Santa Rosa Valley Groundwater Basin. The City does not currently derive any groundwater supply from the Rincon Valley Sub-basin or the Kenwood Valley Groundwater Basin. Table PD-1 provides a summary of the characteristics of the underlying groundwater basins and sub-basins. As shown in Table PD-1, the Santa Rosa Plain Sub-basin covers an area of approximately 80,000 acres. It is home to approximately half of the population of Sonoma County, including the cities of Santa Rosa, Rohnert Park, Cotati, Sebastopol, Town of Windsor, and unincorporated areas of Sonoma County.

Table PD-1. Characteristics of Local Groundwater Basins/Sub-basins Underlying the City

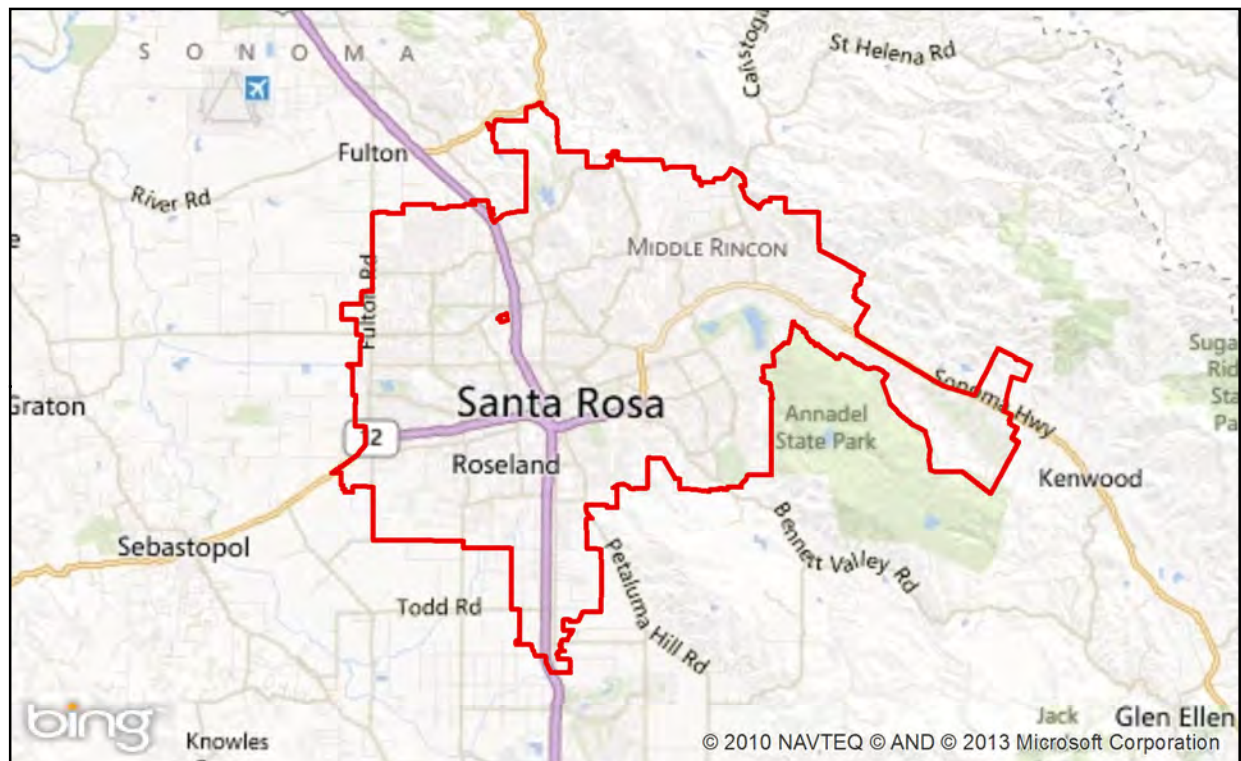
Groundwater Basin Name	Sub-basin Name	DWR Basin Number	Surface Area
Santa Rosa Valley Groundwater Basin	Santa Rosa Plain Sub-basin	1-55.01	80,000 acres (125 square miles)
	Rincon Valley Sub-basin	1-55.03	5,600 acres (9 square miles)
Kenwood Valley Groundwater Basin	None	2-19	5,120 acres (8 square miles)

Source: City of Santa Rosa, 2013

The groundwater system beneath the Santa Rosa Plain provides numerous benefits to the region, including rural residential and municipal water supplies, irrigation water for agriculture, and baseflow to streams and surface water bodies. Water supply in the Santa Rosa Plain is met by combinations of surface-water delivery from the Russian River (and its tributaries) and groundwater from water wells. There are over 12,000 permitted wells in the basin and these provide water for a variety of uses, including both urban and rural areas, agricultural irrigation, and commercial and industrial uses (City of Santa Rosa 2013).

1.3.2 Relation to Other Groundwater Studies and Plans

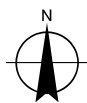
Several basin-wide groundwater studies of the Santa Rosa Plain are currently in progress. One of these is a five-year cooperative study of groundwater resources within the Santa Rosa Plain initiated in 2005 by the United States Geological Survey (USGS) in partnership with the SCWA, County of Sonoma, City of Santa Rosa, City of Rohnert Park, City of Sebastopol, City of Cotati, Town of Windsor and Cal-American Water Company. The objectives of the USGS Study include providing an updated assessment of the



LEGEND

CITY URBAN GROWTH BOUNDARY

Paper Size 8 1/2 x 11
 0 2 4
 Miles
 Map Projection: Lambert Conformal Conic
 Horizontal Datum: North American 1983
 Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

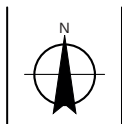
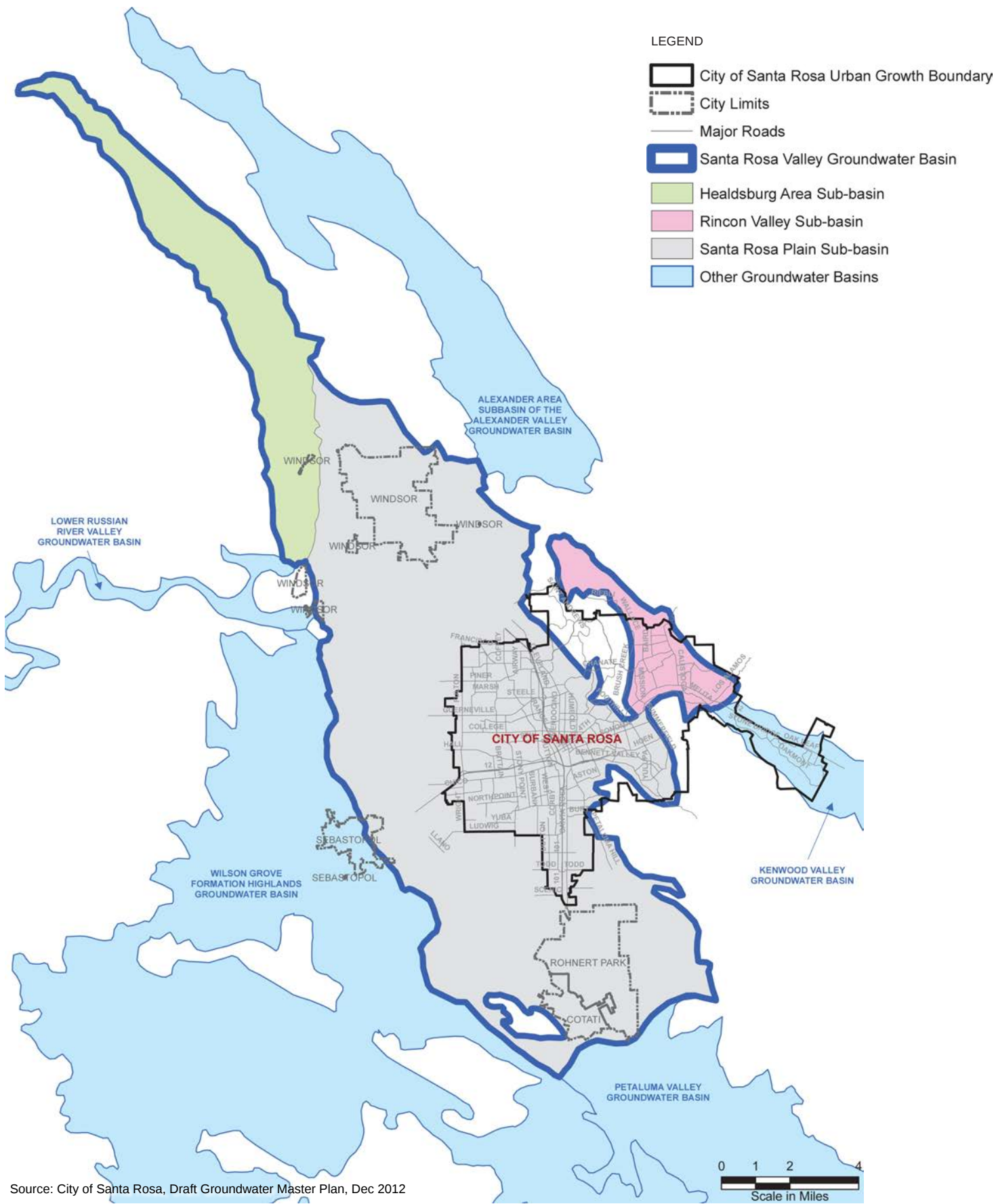


City of Santa Rosa
 Groundwater Master Plan Project

Job Number 8410080
 Revision B
 Date 04 Feb 2013

VICINITY MAP

Figure 1



City of Santa Rosa
Groundwater Master Plan Project

Job Number | 841080
Revision |
Date | February 2013

Location of Major
Groundwater Sub-basins

Figure 2

geohydrology, geochemistry, and geology of the Santa Rosa Plain, developing a groundwater flow model of the Santa Rosa Plain, and evaluating the hydrogeologic impacts of alternative groundwater strategies for management of the Santa Rosa Plain groundwater basin. The USGS is anticipated to release a draft report in mid-2013 and the developed groundwater model in late 2013.

Another groundwater study currently underway is the Santa Rosa Plain Groundwater Management Plan. The Santa Rosa Plain Groundwater Management Plan would be a non-regulatory, voluntary groundwater management plan for the Santa Rosa Plain Groundwater Basin prepared under Assembly Bill 3030. A group of stakeholders representing key groundwater interests was established to participate, contribute, and lead the groundwater management planning process. The development of the groundwater management plan is anticipated to take approximately two years, with completion by the end of 2013.

The City is also in the process of developing a Salt and Nutrient Management Plan for the Santa Rosa Plain Groundwater Sub-basin. The development of such a plan is a requirement of the State Water Resources Control Board Recycled Water Policy which was adopted in 2009, which requires that Plans be developed to manage salts, nutrients, and other significant chemical compounds found in recycled water on a watershed- or basin-wide basis. The City assembled a stakeholder group and conducted five meetings and workshops to gather information and develop the Salt and Nutrient Management Plan. The final version of the Salt and Nutrient Management Plan was submitted to the North Coast Regional Water Quality Control Board in 2013.

1.4 Existing Water Supply and Distribution System

1.4.1 Existing City Water Supplies

The City receives the majority of its potable water supply from the SCWA under the provisions of the Restructured Agreement for Water Supply (Restructured Agreement), which was executed in June 2006. Approximately 95 percent of water delivered by the SCWA is from surface water sources, with the remainder from groundwater (City of Santa Rosa 2013).

In addition to the SCWA supply, in 2005, the City received permission from the California Department of Public Health to use two of its groundwater wells (Farmers Lane Wells 1 and 2), formerly permitted as standby emergency wells, for full time, active potable water supply. The City's Farmers Lane Wells 1 and 2 provide both production and emergency supply, and have a combined capacity of about 2,300 gallons per minute (gpm) (about 3.2 mgd, or about 300 acre-feet per month). In addition to these two production/emergency wells, the City has additional groundwater pumping capacity available on a standby emergency basis. In total, the City has an existing emergency groundwater supply of about 4.3 mgd.

The City is also the owner and operator of the Santa Rosa Subregional Water Reuse System, which treats wastewater for the cities of Santa Rosa, Sebastopol, Rohnert Park and Cotati, and the County Southpark Sanitation District, and also produces tertiary treated recycled water. The City has historically used approximately 350 acre-feet per year (af/yr) of recycled water for landscape irrigation to offset potable water use, and has recently expanded the recycled water system within the City limits to provide an additional 60 af/yr of recycled water for landscape irrigation purposes, further offsetting potable water use.

1.4.2 Water Distribution System Operation Master Zones

The City's water distribution system receives potable water via the SCWA's Santa Rosa and Sonoma Aqueducts and from the Farmers Lane wells, and during an emergency condition, from the City's Carley and Peters Spring emergency wells located east of the Rodgers Creek Fault. The City's water distribution system is segregated into a total of 33 distinct pressure zones and subzones. For operational planning purposes, these 33 pressure zones can be grouped into seven operational "master zones" which can be served by a key pump station that can provide water to the other pressure zones within that master zone via a series of storage tanks and booster pump stations. The master zones are summarized in Table PD-2 and are shown on Figure 3, Operational Master Zones. Several of the projects recommended in the Groundwater Master Plan would be located within these operational master zones, including several emergency supply wells. Although the precise locations of the proposed emergency wells are not currently known, the operational master zones in which they would be located have been determined.

Table PD-2. Water System Operational Master Zones

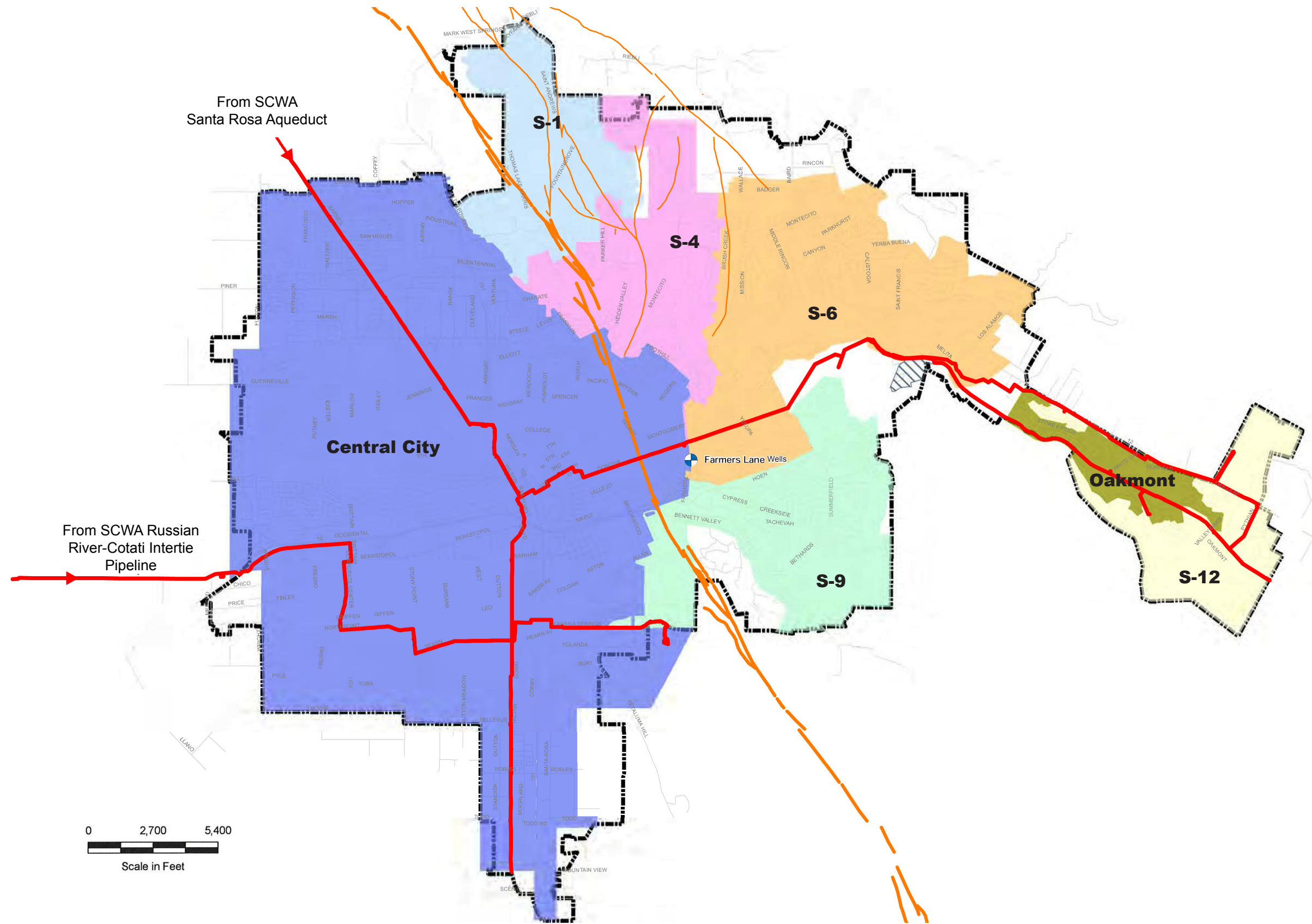
Operational Master Zones
S-1 (Fountain Grove)
S-4 (Montecito Valley)
S-6 (Rincon Valley)
S-9 (Bennett Valley)
S-12 (Oakmont Hillside)
Central City
Oakmont

1.5 Project Description

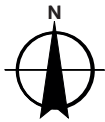
The overall objective of the Groundwater Master Plan is to provide a strategic road map for the City's Utilities staff, BPU, and City Council of how available groundwater resources could be most effectively used to meet the needs of the City's existing and future customers. Included in the preparation of this Groundwater Master Plan is the development of recommended groundwater policies designed to guide the future role of groundwater and promote balanced use and sustainability for the groundwater resources available to the City. Based on these recommended policies, specific groundwater projects and programs have been identified and prioritized.

The development of this Groundwater Master Plan comes at an important time for the City. The USGS is nearing completion of a comprehensive study of the Santa Rosa Plain groundwater basin, and a groundwater management plan for the Santa Rosa Plain groundwater basin is being prepared by key stakeholders. The City has been actively involved in both of these cooperative projects, as well as its own groundwater test well drilling program to evaluate local groundwater conditions. Available information from these studies has been incorporated into the Groundwater Master Plan to provide for a comprehensive evaluation of the City's groundwater resources.

When the development of the Groundwater Master Plan was initiated by the City, it was anticipated that the USGS study of the groundwater basin would have been completed by spring 2012. As of June 2013, when the Draft Groundwater Master Plan was completed, the USGS study had not been completed and



Source: City of Santa Rosa, Draft Groundwater Master Plan, Feb 2013



MASTER ZONE LEGEND:

 S-1	 S-12
 S-4	 Central City
 S-6	 Oakmont
 S-9	

City Urban Growth Boundary

Aqueducts

Rodgers Creek Fault

Farmers Lane Wells



City of Santa Rosa Groundwater Master Plan Project	Job Number	8410080
	Revision	A
	Date	May 2013

Existing Water Supply &
Operational Master Zones

Figure 3

only limited information had been made available. Due to the lack of the USGS study data and distribution of the actual groundwater model for use by the funding agencies (including the City of Santa Rosa), there was insufficient information available for the Groundwater Master Plan to determine whether additional groundwater could be used to meet existing and future water supply needs on a production basis. When the USGS study data and modeling results become available, the City will consider the information when analyzing whether groundwater resources could be used to meet existing and future water supply needs. Should the analysis result in any recommended actions, the City would consider updating the Groundwater Master Plan at that time and any needed CEQA analysis would be performed prior to approval of any changes to the Groundwater Master Plan. Therefore, given the absence of the USGS data, the Groundwater Master Plan focuses on the City's emergency water supply needs.

The Groundwater Master Plan responds to the City's emergency water supply needs in the event of a loss of supply from the SCWA or from an earthquake or other major emergency supply outage event. The evaluation identifies the City's potential emergency water supply needs under various SCWA supply outage scenarios to determine the need for and location of emergency groundwater supply wells within the City's water service area. The emergency scenarios were developed to evaluate both a full and partial loss of the SCWA supply under existing and buildout demand conditions, for both a short-term (2 day) and long-term (14 day) outage duration. Based on the results of the evaluation, the Groundwater Master Plan would recommend the development of an additional 8.4 mgd of emergency groundwater capacity to provide a total of 12.7 mgd when combined with the City's existing emergency groundwater supplies.

The Groundwater Master Plan includes policies and actions to provide direction on the City's future emergency groundwater use and management, as well as specific projects and programs to meet the needs of the City's emergency water supply needs. A summary of the recommended policies, actions, projects and programs is provided below.

1.5.1 Recommended Groundwater Management Policies and Actions

The following policies and actions are proposed in the Groundwater Master Plan to manage available groundwater resources in a sustainable manner for emergency use. A summary of the City's existing groundwater policies can be seen in Table 6-2 in the Groundwater Management Plan (City of Santa Rosa 2013).

Integrated Groundwater Management

Recommended Policies

- The City shall support regional groundwater management goals and objectives which are consistent with the City's goals and objectives through implementation of local policies and activities and shall develop and maintain partnerships with other agencies in support of regional groundwater management activities.
- The City shall continue the use of Farmers Lane Wells Nos. 1 and 2, including rehabilitation and replacement as necessary, to help meet peak water demands.
- The City shall provide and maintain emergency groundwater pumping capacity (additional 8.4 mgd for a total of 12.7 mgd) to meet existing and future health and safety demands should the City's other water supplies become restricted or be shut down due to an emergency (e.g., SCWA transmission main break due to earthquake).

- The City shall evaluate the feasibility of Aquifer Storage and Recovery (ASR) in localized areas of the City.

Recommended City Actions

- Adopt City of Santa Rosa Groundwater Master Plan and implement recommendations; update Groundwater Master Plan every five years.
- Continue participation in the Santa Rosa Plain Groundwater Management Plan and implement recommendations.
- Continue evaluation of ASR feasibility in specific areas of the City as recommended in the Draft Groundwater Management Plan.
- Construct emergency wells and other internal system modifications to provide additional system flexibility during emergency conditions as recommended in the Groundwater Master Plan.
- Explore/investigate the opportunity to pursue emergency interties with adjacent water purveyors.

Stakeholder Involvement and Public Awareness

Recommended Policies

- The City shall prepare an Annual Groundwater Report to report on groundwater conditions and trends beneath the City.

Recommended City Actions

- Prepare an Annual Groundwater Report.
- Maintain “Groundwater” page on the City’s website including key information about groundwater (include annual groundwater report, links to USGS Study, Groundwater Management Plan, Groundwater Primer, etc.).

Groundwater Protection and Recharge

Recommended Policies

- Continue to follow the development of the Salt and Nutrient Management Plan.
- The City shall consider policies in identified groundwater recharge areas within the City’s Urban Growth Boundary to protect and enhance groundwater recharge (e.g., protect recharge areas from being covered by low permeability surfaces). The data associated with the USGS Santa Rosa Plain groundwater model will be helpful.

Recommended City Actions

- Pursue actions that result in the protection of the City’s groundwater wells from potential contamination by others.

Conservation and Efficiency

Recommended Policies

- No new recommended policies.

Recommended City Actions

- Continue to support and implement the City’s water conservation programs.

Water Reuse

Recommended Policies

- No new recommended policies.

Recommended City Actions

- Continue to develop the City's on-going recycled water program to develop cost-effective projects to reduce (offset) the demand for potable water supplies.

Monitoring and Modeling

Recommended Policies

- The City shall prepare an Annual Groundwater Report to report on groundwater conditions and trends.

Recommended City Actions

- Implement a key well monitoring program to measure groundwater levels for the City's key well network.
- Continue participation in the California Statewide Groundwater Elevation Monitoring (CASGEM) water level monitoring program.
- Maintain a database of the City's groundwater facilities and available data.
- Prepare an Annual Groundwater Report.
- Review the USGS Study of the Santa Rosa Plain (when available) and incorporate applicable data into City groundwater database.

Climate Change Planning

Recommended Policies

- Continue to work with SCWA staff to better understand the potential ranges in impacts of climate change to the City's available water supplies.

Recommended City Actions

- Consider the potential feasibility of ASR wells to assist with meeting the changing needs due to climate change.

1.5.2 Recommended Groundwater Projects and Programs

The Groundwater Master Plan would recommend several specific groundwater projects and programs to be implemented over a 15-year period. Table PD-3 provides a summary of the recommended near-term (next five years), mid-term (next five to ten years) and long-term (next ten to 15 years) groundwater supply projects.

Table PD-3. Recommended Groundwater Projects and Programs

Recommended Timeframe	Project/Program Identification Number	Project/Program Name
Near-Term (next 5 years)	GW-A-001	Maintain and Update City Groundwater Database
	GW-A-002	Annual Groundwater Report
	GW-A-003	Phase 2 ASR Feasibility Evaluation – Pilot Demonstration Program
	GW-A-004	Evaluate Opportunity for Emergency Interties with Adjacent Water Purveyors
	GW-A-005	Construct Two Emergency Wells in Central City Master Zone
	GW-A-006	Construct One Emergency Well in vicinity of Martha and Slater Test Well Sites to serve Central City Master Zone
	GW-A-007	Construct One Emergency Well in Oakmont/S-12 Master Zone
Mid-Term (next 5 to 10 years)	GW-B-001	Construct One Emergency Well in Central City/S-1 Master Zone
	GW-B-002	Construct One Emergency Well in Master Zone S-6 (Rincon Valley Area)
	GW-B-003	Construct One Emergency Well in Master Zone S-9 (Bennett Valley Area)
Long-Term (next 10 to 15 years)	GW-C-001	Construct Two Emergency Wells in Central City Master Zone
	GW-C-002	Construct Two Emergency Wells in Master Zone S-6 (Rincon Valley Area)

Source: City of Santa Rosa 2013

1.5.2.1 Projects GW-A-001 through GW-A-004

Projects GW-A-001, GW-A-002, GW-A-003 and GW-A-004 consist of programs that would not require or result in the construction of new facilities, would not cause significant environmental effects, and are otherwise exempt from CEQA.

Project GW-A-001 involves on-going collection of groundwater level data on a semi-annual basis and occasional groundwater quality data to provide information on the local groundwater basin underlying the City. The data would be collected from existing wells and from any new test wells or completed emergency wells to be installed in the future. However, Project GW-A-001 does not include construction or other improvements that would result in physical environmental impacts.

Project GW-A-002 consists of developing annual groundwater monitoring reports summarizing hydrogeologic information. Project GW-A-002 would not result in physical environmental impacts.

Project GW-A-003 would involve a pilot demonstration program to determine the hydraulic response of aquifers to aquifer storage and recovery operations. Project GW-A-003 would not be subject to CEQA review, as feasibility studies are exempt from CEQA under Section 15262 of the CEQA Guidelines.

Project GW-A-004 would consist of investigating the feasibility of emergency interties with adjacent water purveyors, including the California American Water Company, the City of Rohnert Park, and the Valley of the Moon Water District. Project GW-A-004 would not be subject to CEQA review, as feasibility studies are exempt from CEQA under Section 15262 of the CEQA Guidelines.

The remaining Projects in Table PD-3 (GW-A-005 through GW-C-002) would consist of installation of new emergency groundwater wells. Each of these projects would result in construction and operation of new water system facilities, which are described in more detail below.

1.5.2.2 Construction and Operation of Emergency Groundwater Wells

A number of emergency groundwater wells are proposed to meet the City's emergency groundwater supply needs. Some of the emergency wells are needed to meet emergency demand conditions for existing customers, while others would be needed in the future to meet future emergency demands through buildout. As described in Table PD-3, approximately 11 new emergency wells would be needed. The estimated number of new emergency wells reported in the Groundwater Master Plan and summarized in Table PD-3 is based on an assumption that each well would produce 700 gallons per minute. Therefore, depending on the actual capacity of future wells, implementation of the Groundwater Master Plan may require installation of more or less than 11 emergency wells to provide the desired additional 8.4 mgd of emergency groundwater capacity. The exact locations of the proposed wells are not currently known, however, the location of the emergency wells would, in general, be as shown on Figure 4.

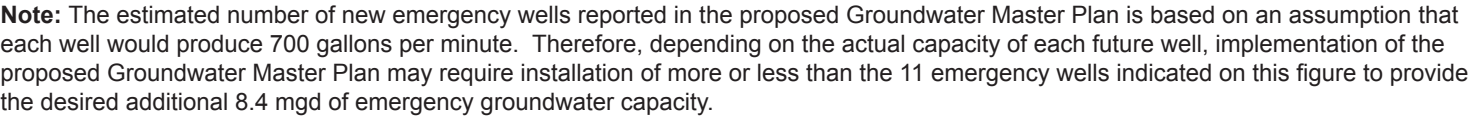
Test Wells

The siting and installation of emergency wells would be preceded by installation of test wells and geotechnical borings to collect subsurface hydrogeological data at various points in the City. The borings and/or test wells would be installed in varying locations within the City to gain a more comprehensive understanding of the underlying groundwater bearing aquifer zones, lithology and regional characteristics so that emergency wells can be successfully sited and installed. It is assumed that each emergency well would require installation of one or more test wells. In general, the construction process involved with installing test wells would be similar in nature to the drilling of emergency wells described below.

Upon completion of test well construction and well development, the areas disturbed during construction would be restored to pre-existing conditions. Disturbed areas would be seeded and mulched, as necessary. Only the wellhead, concrete pad, and protective bollards would remain aboveground, with a permanent footprint of approximately 30 square feet. Image 1 below shows the above-ground components of an existing City test well.

Following construction, test wells would become part of the City's well monitoring program. This program would include measurement of groundwater levels and may include occasional groundwater quality testing. Groundwater level measurements would be anticipated to be collected at least semi-annually during the spring and fall, with possibly more frequent measurements. The test wells would not have permanent pumps in place and would not be used for emergency water supplies.

A summary of the construction process and general operation and maintenance of emergency well facilities, including test wells, is described below.



MASTER ZONE LEGEND:

 S-1	 S-12	 City Urban Growth Boundary
 S-4	 Central City	
 S-6	 Oakmont	
 S-9		



City of Santa Rosa	Job Number	8410080
Groundwater Master Plan Project	Revision	A
	Date	May 2013

Groundwater Project Locations

Figure 4

Image 1: View of Existing Test Well

Well Drilling

The drilling process associated with installation of emergency wells and test wells/test borings would be similar in nature. In order to mitigate noise and visual impacts, drilling/construction operations would be enclosed within an engineered sound enclosure which would be approximately 100 feet long by 75 feet wide by 25 feet high, though this may vary depending on site logistics and constraints. The sound enclosure would enclose the drill rig, shaker, cuttings bin, mud tank, pipe bed, generator, geologist trailer, backhoe and drilling supplies and materials. An area of about the same size outside the enclosure would be used for water tanks, worker vehicle parking and temporary storage of miscellaneous supplies. Depending on security provisions, this area may be enclosed with a temporary chain link fence. During drilling, each well site would impact approximately 15,000 square feet. Soil cuttings would be tested for hazardous materials and disposed of at a suitable landfill or a City owned facility that can accept soils.

Wells would generally be drilled to depths of between approximately 500 to 1,000 feet (the exact depth would vary based on the actual hydrogeologic conditions encountered), and the diameter of each finished drill hole would range between approximately 17 and 36 inches. The drilling process may require continuous operation of the drilling equipment until the desired depth is achieved. For the anticipated 1,000 feet of depth, well drilling and casing/screen installation may require nighttime and weekend activity for up to 20 consecutive days and nights. Continuous operations would also be required during pump testing (for one continuous 72-hour period), depending on conditions encountered.

A pipe or hose would typically be connected to a nearby fire hydrant for supplemental water supply during drilling. Any water generated by the well during the pump test would typically be conveyed through a pipe and discharged to the sanitary sewer. Groundwater and/or well development water could also be discharged to the local storm drain system, and any such discharges would be required to comply with the City's Municipal Storm Water Permit or other applicable waste discharge requirements, including

removal of sediment and solids through settling or filtration, controlling discharge rates, and using other best management practices to minimize erosion potential, as well as monitoring and reporting.

Development² of the well would begin after the gravel pack has been placed and an annular seal has set for a minimum of 24 hours. Various well pumping tests would be performed after final well development. When the pumping tests have been completed and the test pump removed, final activities for emergency wells would include video and alignment surveys, as well as disinfection of the completed well and site restoration.

It is anticipated that up to 2 million gallons of groundwater would be produced from a well during the final well development and pumping tests, which would be discharged to either the sanitary sewer or local storm drain system. Depending on the production capacity of the aquifer formation, the peak discharge rate during well development (lasting for a few hours) could be up to 1,500 gpm, although the typical discharge rate would be closer to about half that rate. It is anticipated that the development and testing would occur over the course of approximately five to ten days. The capacity of the sanitary sewer and local storm drain systems is variable, but if necessary, the groundwater discharge would be pumped to portable storage tanks and then released to the sanitary sewer or storm drain such that the discharge rate would not exceed the existing capacity of the individual drainage system.

Emergency Well Facility Buildings

For emergency wells, following drilling, further site development would occur, including construction of appropriate enclosures, pipelines, and installation of well equipment. Construction of emergency wells would involve excavation, grading, and drilling as well as spoil management and handling. It is possible that vegetation removal would be required at sites, including potential tree removal and/or trimming. Soil would be excavated for installation of well facilities and pipelines needed to connect the wells to sanitary sewers, storm drains, and electrical facilities. Soil excavated during well facility construction and pipeline installation may be used as backfill around the facilities, or would be hauled off-site for recycling or disposal.

Buildings would enclose the emergency wells. The buildings are anticipated to be about 15 feet tall and constructed of concrete block with metal roofs, or other similar types of buildings materials. The exterior building colors would be earth tone or a color that would match other nearby structures. The building sizes are anticipated to range from about 100 to 250 square feet depending on the treatment needs for each emergency well.

The buildings would house the wellhead, pump, piping, associated electrical and control equipment, and disinfection chemicals, such as sodium hypochlorite, as needed. The volume of sodium hypochlorite to be stored at any one well site could range up to 600 gallons, but would be dependent on the pumping capacity of an individual emergency well. Well facilities would have provisions for a drive-up portable generator connection adjacent to the building, so that in the event of a power failure, the City could deliver a portable diesel-powered generator to the site, and the well pumps could continue to run during an emergency.

Image 2 shows an existing City emergency well facility that would be somewhat similar in appearance to proposed new emergency well facilities. The pictured emergency well facility including the parking apron

² Development of water wells includes procedures designed to provide sand-free water and maximize well yield. Well development is accomplished by applying some form of energy to the well screen and formation that removes the finer fraction of aquifer material around the well, restores natural hydraulic properties, and creates a graded zone of sediment around the well screen to stabilize the formation (Driscoll 1986).

is approximately 2,500 square feet in total size, is surrounded by a black chain link fence, and has an approximately 150-square foot building that houses the well components. Low-maintenance vegetation is provided along the perimeter of the fence.

Image 2: View of Existing Emergency Well Facility



Emergency Well Water Connection, Sanitary Sewer, and Storm Drain Piping

Underground piping would be installed at each emergency well to connect to the local water distribution system. Underground piping would also connect well facilities to the local storm drain system and/or the sanitary sewer system to allow discharge of well water or chlorinated water.

New pipelines would be installed below ground using standard open-trench construction methods to connect to existing distribution systems at an average distance of up to 500 feet for each well. Trenchless construction could be utilized in some circumstances, such as crossings of streams or Highway 101.

Open-trench construction involves the following steps:

- 1) vegetation removal and grading or pavement cutting depending on the location,
- 2) trench excavation and shoring to stabilize the sides of the trench if necessary,
- 3) pipeline installation,
- 4) trench backfilling and compacting, and
- 5) surface restoration.

The width of pipeline construction zones generally would be 20 feet, although the width may be narrower for the underground electrical conduit construction zone. It is possible that construction within roadways and temporary lane closures would be required during construction along some of the pipeline connection points. Once the trenches are backfilled, disturbed areas would be graded to restore to approximate pre-construction conditions and repaved or revegetated with native plant seed mix or turf as appropriate for the site.

Trenchless construction could consist of horizontal directional drilling (HDD) or jack and bore installation. HDD is a process that uses a laser-guided and remotely controlled boring machine and auger that is driven from a sending pit to a receiving pit. HDD typically involves the use of bentonite drilling slurry, which is a fine clay material. The pits would be sized to accommodate drilling equipment, support equipment, and a sump for drilling slurry. Sump areas would be required to contain the drilling slurry/fluids used during the construction process and to capture the slurry/fluid once the initial hole is excavated. Jack and bore installation is a multi-stage tunneling process that would install the pipeline simultaneously with the excavation process in sending and receiving pits located on either side of the crossing. A temporary horizontal jacking platform and a starting alignment track in an entrance pit would be constructed at the desired elevation. A steel casing pipe would then be jacked by manual control along the starting alignment track with simultaneous excavation of the soil being accomplished by a rotating cutting head. This process may require the use of drilling slurry. The ground up soil (spoil) is transported back to the entrance pit by a drill rotating inside the pipe. After the casing pipe is installed, the new pipeline is installed through the casing and the ends of the casing are sealed. For both HDD and jack and bore methods, disturbed surface areas would be restored to pre-construction conditions.

Emergency Well Site Access, Security, Landscaping, and Lighting

Permanent access to the emergency well sites would be needed for servicing the well and pumping equipment. The permanent access is anticipated to be provided via a new paved or asphalt concrete driveway from a public street or other normally accessible roadway. Where there is existing access, no new access would be constructed. Parking would be accommodated in and around the emergency well facilities and may include one or more designated parking spaces at each site.

Security fencing would be provided at all new emergency wells. The security fence is anticipated to be either a black vinyl-coated eight-foot-high chain link fence or a similar six-foot high fence with barbed wire. Low-maintenance vegetation may be provided along the perimeter of the fence.

Permanent outdoor security lighting would be provided, as needed. Lights would either be mounted on the building or pole-mounted within the emergency well facility site. All lighting would be required to 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 set to be motion-activated.

Construction Duration, Hours, Workforce, and Truck Trips

Following is a list of the activities and estimated durations associated with construction of emergency well facilities and pipelines.

Well Drilling – The drilling, casing and development of an emergency well (or test well) would require approximately twelve weeks per well.

Emergency Well Facility Construction – Emergency well facility buildings are anticipated to require an approximately 13-week construction period, including the following anticipated construction timeframes:

- Site Preparation: 2 weeks
- Building Foundation: 3 weeks
- Building Construction: 6 weeks
- Utility Connection: 1 week
- Paving: 1 week

Pipeline Construction – Installation of pipelines would overlap with construction of the emergency well facility including excavation, disconnection of affected utilities, pipeline replacement, utility reconnection, and backfill of construction trenches.

Typical daily construction hours would be between 7:00 a.m. and 7:00 p.m. Monday through Friday, and 9:00 a.m. and 5:00 p.m. on Saturdays, except for the period of well drilling. The nature of well installation requires continuous operation of the drilling equipment until the desired depth is achieved because when drilling in unconsolidated sediments, there is a risk that the borehole walls could collapse, requiring re-drilling of the boring. Therefore, well installation could require nighttime and weekend activity during drilling and other drilling and well installation-related activities (for up to approximately 20 consecutive days and nights) and also during pump testing (for one continuous 72-hour period).

The number of construction-related vehicles traveling to and from an emergency well site would vary on a daily basis. It is anticipated that the peak number of haul trucks delivering material and equipment or hauling away excavated drill cuttings on any one day would be approximately eight round trips. In addition, it is anticipated that the maximum daily traffic from the construction crew would be approximately 16 round trips per day. Therefore, the maximum number of truck trips expected on any one day during emergency well construction is anticipated to be 24 round trips.

The number of construction-related vehicles traveling to and from a test well site would also vary on a daily basis. It is anticipated that the peak number of haul trucks hauling away excavated soil on any one day would be approximately six round trips, and that the maximum daily traffic from the construction crew during test well drilling would also be approximately six round trips per day. Therefore, the maximum number of truck trips expected on any one day during test well installation is anticipated to be 12 round trips.

Operation and Maintenance of Emergency Wells

Emergency wells would only be operated on an “as needed” basis during emergencies, such as during an outage of SCWA supplies. In these circumstances, proposed emergency wells could be operated continuously for up to five days or for shorter intervals, depending on the need for water. Emergency wells could be operated for a maximum of 15 days each year. Operation and maintenance of the well facilities would, at most, require one maintenance visit per day on average when the wells are operating.

The emergency wells would normally be turned off, but regular exercising would be required to ensure that the wells remain operational over time. Well exercising would be anticipated to occur monthly. Wells would typically be exercised for one hour per month and for a single, 4-hour period annually. Operators may fine-tune the exercise schedule according to the characteristics of individual wells. It is anticipated that approximately 170,000 gallons of groundwater would be produced from a well during four hours of regular well exercising at an assumed production rate of 700 gpm. Normal operation of the emergency wells would result in the addition of less than one vehicle trip per day to local roadways.

Groundwater pumped during well exercising would be discharged to either the sanitary sewer or to a local storm drain under appropriate permits. In the event there is a chlorine residual in the pumped groundwater, the water would be discharged to a sanitary sewer or dechlorinated prior to discharging to a storm drain. Groundwater discharged to the local storm drain system would be required to comply with the City’s Municipal Storm Water Permit (RWQCB 2009). Required control measures would include dechlorination using aeration or other appropriate means, removal of sediment and solids through settling or filtration, and controlling discharge rates and using other best management practices to minimize erosion potential.

1.6 City Entitlements and Other Public Agencies Whose Approval is Required

Construction and operation of the projects described above would be conducted to meet applicable regulations.

Depending on the location of the proposed facility, required City entitlements may include:

- Use Permit or Variance
- Building Permit
- Compliance with City's Municipal Stormwater Permit
- Certified Unified Program Agencies (CUPA)/Hazardous Materials Business Plan

Table PD-4 lists the federal, State, local, and regional regulatory/permitting agencies that may have permitting or approval authority over certain aspects of the Project.

Table PD-4. Regulatory/Permitting Agencies

Regulatory/Permitting Agency	Potential Permit/Approval
Federal Regulatory/Permitting Agencies	
United States Army Corps of Engineers	Approval of any future wetland fill activities, pursuant to the Clean Water Act.
United States Fish and Wildlife Service	Approvals involving any future potential take of federally listed wildlife and plant species and their habitats covered under the Federal Endangered Species Act.
State Regulatory/Permitting Agencies	
California Department of Public Health	Approval of well construction and operation.
California Regional Water Quality Control Board, North Coast Region (RWQCB)	Discharge permits, if required, for emergency and/or maintenance water discharges, and for “overboard” pumping of wells to waters of the State, if proposed. 401 Water Quality Certification for any work subject to the Clean Water Act.
California Department of Fish and Wildlife	1602 Streambed and Lake Alteration Agreement, pursuant to the Fish and Game Code, for any activity requiring streambed alterations. Approval of any future potential take of state-listed wildlife and plant species covered under the California Endangered Species Act.
California Department of Transportation (Caltrans)	Encroachment permits to construct or operate facilities in a State roadway and interstate highway right-of-way, if applicable.
State Water Resources Control Board	Stormwater General Permit and Stormwater Pollution Prevention Plan.
California Office of Historic Preservation	Compliance with Section 106 of the National Historic Preservation Act, as applicable, for any work subject to the Clean Water Act.
Local and Regional Regulatory/Permitting Agencies	
Bay Area Air Quality Management District (BAAQMD)	Permit required for stationary equipment that may generate air pollutants.
Local School Districts	If a well were sited on a school property, approval for construction and use of property under a local school district’s jurisdiction would be required.
Sonoma County Permit and Resource Management Department	Approval of well construction in accordance with the California Department of Water Resources standards and Section 25B of the County Municipal Code.

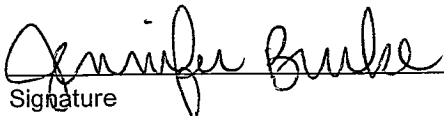
2. Determination

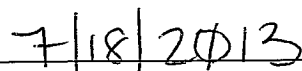
The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

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 will be prepared.
- ☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an EARLIER EIR or NEGATIVE DECLARATION pursuant to applicable legal standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.


Signature


Date

Jennifer Burke, Deputy Director - Environmental Services

3. Environmental Effects of the Project

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporation	Less-Than-Significant Impact	No Impact
I. AESTHETICS				
Would the Project:				
a. Have a substantial adverse effect on a scenic vista?			✓	
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?		✓		
c. Substantially degrade the existing visual character or quality of the site and its surroundings?			✓	
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			✓	

Discussion:

I. a, c) Adverse Effect on a Scenic Vista or Visual Character – Less than Significant

Construction

Implementation of the Project would include construction of test wells, emergency well facilities, and pipelines at various locations within the City's Urban Growth Boundary. Construction activities would result in short-term localized changes to visual character due to temporary ground disturbance and construction staging and work areas, encompassing up to 15,000 square feet. As described in Section 1.5.2.2 of the Project Description, areas disturbed during construction would be restored to pre-existing conditions, including repaving or revegetating with native plant seed mix or turf as appropriate for the site. Because the localized effects on visual character or quality during construction would be temporary, the disturbed area would be small, and most of the disturbed area would be restored to pre-construction conditions, the construction-related impact would be less than significant.

Operation

Scenic Vistas

Scenic vistas and backdrops in Santa Rosa include surrounding ridgelines, including Bennett and Taylor Mountain in the southeast portion of the City, Annadel and Sugarloaf State Parks, and several historic neighborhoods, open spaces, and scenic roadways. Depending on the location of new emergency well facilities, such facilities could have localized effects on a scenic vista. As shown in Images 1 and 2 in the Project Description, the new test wells and emergency well facilities would not be of a scale or height that would likely alter or obstruct public views of surrounding hillsides or other scenic vistas. Therefore, the potential impact on scenic vistas would be less than significant.

In addition, adherence to the City's goals, policies, and Hillside Development Standards would ensure that any wells potentially sited on hillsides would be sited in a manner that would avoid significant impacts

to scenic vistas. The Santa Rosa General Plan 2035 includes several goals and policies pertaining to preservation and enhancement of Santa Rosa's hillsides, a major scenic vista for the City. Policy UD-A-1 directs the City to maintain view corridors to natural ridgelines and landmarks, such as Taylor Mountain and Bennett Mountain, while Policy UD-A-9 prohibits development on hillsides and ridgelines where structures would interrupt the skyline. The City enforces these policies through its Hillside Development Standards contained in Municipal Code Chapter 20-32. The requirements apply to new land uses on sites with a slope of 10 percent or greater, and require such projects to include a visual analysis to identify any significant natural landforms on the site (including, for example, slopes greater than 25 percent or groves of trees that are highly visible from multiple public viewpoints), as well as any major public viewpoints from which the site contributes to community character. The Hillside Development Standards require minimizing the alteration of the topography, drainage patterns and vegetation on land with slopes of 10 percent or more, prohibit locating sites on a hillside or ridgeline where a structure would interrupt the view of the skyline from a major public viewpoint, and prohibits altering a slope that is greater than 25 percent identified as visually sensitive.

In addition, Goal UD-H states that the City shall design hillside development to be sensitive to existing terrain, views, and significant natural landforms or features. Policy UD-H-6 directs the City to minimize vegetation removal in hillside areas, and preserve large trees that partially screen development or help blend new development into views. Policy UD-I-3 directs the City to reflect the predominant colors and textures within the surrounding landscape in selection of building materials for hillside development. For example, roof colors should tend toward earth tones, so that they are less visible from adjacent or upslope properties. In addition, General Plan Policy UD-A-8 directs the City to maintain hillsides in the city as a scenic backdrop to urban development.

Visual Character

Several policies in the Santa Rosa General Plan 2035 seek to preserve and enhance scenic roads in the City. Policy T-G-5 states that the City should retain existing trees and vegetation along scenic roads, as possible. Policy T-G-6 states to provide large setbacks from scenic roads, as possible, to avoid encroachment of buildings on the view of the roadway. Policy T-G-13 states to plant graded areas to avoid erosion and maintain a pleasing appearance.

As shown in Image 1 in the Project Description, test wells would be small and not of a scale that would adversely affect visual character. The impact would be less than significant. Emergency well facilities may require removal of vegetation and trees depending on their location, but have a relatively small permanent footprint of 2,500 square feet. As shown in Image 2 in the Project Description, the well facility building would not be large enough to substantially degrade the visual character of an area or locally-designed scenic roads.

I. b) Damage Scenic Resources within a State Scenic Highway – Less than Significant with Mitigation

Construction and Operation

A portion of State Highway 12 within the City's Urban Growth Boundary (from Danielli Avenue to Pythian Drive) is part of an officially designated State Scenic Highway. This portion of the State Scenic Highway is located within the City's Oakmont/S-12 operational master zone. In addition, State Highway 12 (from US Highway 101 to Danielli Avenue) is listed as an eligible State Scenic Highway. Highway 101 within the City's Urban Growth Boundary is not currently listed as a state designated or eligible scenic highway.

(Caltrans 2013). Policy OSC-H-3 of the Santa Rosa General Plan 2035 directs the City to preserve the Highway 12 scenic route in eastern Santa Rosa, including the corridor of oak trees.

Implementation of the Project would include installation of one or more test wells or emergency wells in the Oakmont/S-12 Master Zone. Test wells and test borings would be small and not of a scale that would potentially degrade scenic views, and, therefore, the impact would be less than significant.

If an emergency well facility were located within the 200-foot wide view corridor adjacent to the State-designated portion of State Highway 12, it could potentially degrade scenic views. Because the localized effects on scenic resources during construction would be temporary and surrounding areas would be restored to pre-construction conditions, the construction-related impact would be less than significant. However, the potential location of an emergency well facility within the designated scenic corridor could be significant.

Mitigation Measure AES-1: Emergency Well Siting Near State-Designated Scenic Highway 12

Placement of emergency wells within 200 feet of State-designated Scenic Highway 12 between Danielli Avenue and Pythian Drive shall be avoided, if feasible. If placement of an emergency well is necessary within 200 feet of Highway 12 in this area, the facilities shall be designed and implemented so that they do not detract from the scenic quality along Highway 12. Such design and implementation may include, but would not be limited to, designing emergency well facilities to incorporate building features and design elements that are compatible with the surroundings and designing landscaping plans to screen views of new structures and equipment from motorists along Highway 12.

Implementation of Mitigation Measure AES-1 (Emergency Well Siting Near State-Designated Scenic Highway 12) would reduce impacts to a less-than-significant level by endeavoring to not locate emergency wells within 200 feet of Highway 12 within the State-designated scenic highway portion, and requiring emergency well facilities located within 200 feet of Highway 12 between Danielli Avenue and Pythian Drive be designed in a manner that would be compatible with the existing visual character and/or include landscape screening from Highway 12 motorists.

I. d) New Source of Light or Glare – Less than Significant

Construction

Implementation of the Project would include drilling of test wells and emergency wells at various locations within the City's Urban Growth Boundary. As described in the Project Description, the drilling process may require continuous operation of drilling equipment until the desired well depth is achieved and the well casing/screen and gravel pack are placed, which may require nighttime construction activity for up to 20 consecutive nights during well drilling and for three consecutive nights during development and well pump testing.

During construction, the drilling process, including all drilling equipment necessary for well installation, would be enclosed to prevent the trespass of nighttime construction-related lighting onto adjoining properties. Therefore, the Project impact related to nighttime sources of light or glare during drilling activities would be less than significant.

Other site work, such as construction of buildings, pipelines, and paved areas would be performed during normal construction hours and would not require use of construction-related lighting. No impact would occur.

Operation

Emergency well facilities would include outdoor security lighting, which would typically be mounted to the side of the well building. The outdoor lighting would be installed in accordance with the City's Outdoor Lighting standards, which requires shielding light fixtures and directing light downward and away from adjoining properties. Therefore, the Project impact related to new sources of substantial light and glare would be less than significant.

Test wells would not be lighted, and therefore would not create a new source of light or glare. No impact would occur.

	Potentially Significant Impact	Less-Than- Significant With Mitigation Incorporation	Less- Than- Significant Impact	No Impact
II. AGRICULTURE AND FOREST RESOURCES				
Would the Project: (In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.) 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?			✓ ✓ ✓ ✓	✓

Discussion:**II. a) Convert Farmland – Less than Significant**

There are multiple parcels of land designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance within the operational master zones where emergency wells or test wells would be constructed (CDC 2012a). Prime Farmland and Farmland of Statewide Importance have the best combination of physical and chemical characteristics for the production of crops, and therefore are the highest value farmland. Unique Farmland and Farmland of Local Importance are not of the highest value, but are important to the local agricultural economy (Santa

Rosa 2009a). Most of the agricultural land within the City's Urban Growth Boundary consists of Farmland of Local Importance (Santa Rosa 2009b). Policy OSC-C-3 of the Santa Rosa General Plan 2035 aims to preserve and enhance agriculture within the Planning Area.

Construction

Construction of emergency wells would require site grading and clearing, well drilling and testing, construction of well facility buildings, utility connections, and potentially a permanent access driveway and parking area at some sites. The construction area would be approximately 15,000 square feet and construction would last approximately five to six months. Test well construction would be very similar to emergency well construction, and would temporarily disturb up to 15,000 square feet. Following construction, disturbed areas would be seeded and mulched as necessary. Because construction activities would be temporary and the construction area would be returned to existing conditions, construction activities would not result in conversion of important farmland to non-agricultural use.

Operation

The permanent impact area of test wells would be approximately 30 square feet and the permanent footprint of emergency well facilities would be approximately 2,500 square feet. Well facilities may be located on agricultural parcels. The placement of test or emergency well facilities on important farmlands would not significantly interfere with active agricultural uses or result in the conversion of important farmland to non-agricultural use because of the small size of the well facilities' permanent footprint, and because well facilities are a compatible use with active agricultural operations. Therefore, impacts due to operation of the Project on important farmlands would be less than significant.

II. b) Conflict with Existing Zoning or Williamson Act Contract – Less than Significant

There are no zoning designations specifically for agriculture within the City; therefore the Project would not conflict with existing zoning for agricultural use. The proposed emergency wells and test wells would occur within the City's Urban Growth Boundary.

An approximately 67 acre area, partially located within the S-6 operational master zone, is protected under a Williamson Act Contract (CDC 2012b). It is designated as Williamson Act-Mixed Enrollment Agricultural Land. The development of test and emergency well facilities on land protected by the Williamson Act would not interfere with the continuation of agricultural operations on these lands. As discussed previously under Impact II.a, well facilities may be located on agricultural parcels. The placement of test or emergency well facilities on land protected under the Williamson Act would not significantly interfere with active agricultural uses or result in the conversion of important farmland to non-agricultural use because of the small size of the well facilities' permanent footprint, and because well facilities are a compatible use with active agricultural operations. Therefore, the Project would not conflict with existing agricultural zoning or Williamson Act Contract, and impacts would be less than significant.

II. c, d) Conflict with Forest Land Zoning or Convert Forest Land to Non-forest Use – No Impact

There are no lands zoned as forest land, timberland, or Timberland Production within the City's Urban Growth Boundary and therefore there would be no impact on forest land zoning.. Douglas-Fir forests are present in southeast Santa Rosa, such as in Annadel State Park, a small portion of which is located within the City's Urban Growth Boundary (Santa Rosa 2009b). However, Annadel State Park is located outside of the operational master zones.

Other forested areas are found in several locations throughout the City, such as the Pine Creek Reservoir and Fountaingrove areas (operational master zones S-4 and S-1). However, if well facilities are located in these forested areas, the facilities would be located next to existing infrastructure to allow ease of access. Additionally, the permanent impact area of test wells would be approximately 30 square feet and the permanent footprint of emergency well facilities would be approximately 2,500 square feet. Due to the small permanent impact area, impacts related to the conversion of forest land would not be substantial, and therefore, the Project would have a less than significant impact on the loss of forest land.

II. e) Convert Farm or Forest Land – Less than Significant

As discussed under Impact II.c,d, there are no forest lands located within the operational master zone areas, therefore implementation of the Project would have no impacts related to forestland.

The Project would construct new test wells and emergency well facilities. The construction and operation of these groundwater facilities would not result in the conversion of farmland to non-agricultural use because it would not result in changes to the existing environment which could be incompatible with existing farmland, therefore impacts would be less than significant.

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

Discussion:

The following air quality analysis utilizes the impact assessment methodologies presented in the BAAQMD CEQA Air Quality Guidelines (BAAQMD 2010 and 2011). The BAAQMD CEQA thresholds were recently invalidated by a trial court because BAAQMD did not itself do a CEQA evaluation of the thresholds before their adoption. The Court, however, did not rule on or question the adequacy of the BAAQMD CEQA Air Quality Guidelines, including the impact assessment methodologies, or the evidentiary basis supporting the thresholds, which are included in the Guidelines (updated in May 2011). The City, as Lead Agency, has the discretion to use the BAAQMD CEQA Air Quality Guidelines and methodology for analyzing air quality impacts under CEQA based on the evidence and technical studies supporting the Guidelines.

III. a) Conflict with or Obstruct Applicable Air Quality Plan – Less than Significant

Construction and Operation

The BAAQMD's Bay Area 2010 Clean Air Plan is the most recently adopted regional air quality plan that pertains to the Project (BAAQMD 2010). The 2010 Clean Air Plan provides a comprehensive plan to protect air quality, public health, and the climate. The BAAQMD CEQA Guidelines set forth criteria for determining a Project's consistency with the 2010 Clean Air Plan (BAAQMD 2011). Per the Guidelines, the BAAQMD considers a Project consistent with the Clean Air Plan if it: 1) can be concluded that a Project supports the primary goals of the Plan [by showing that the Project would not result in significant

and unavoidable air quality impacts]; 2) includes applicable control measures from the applicable Air Quality Plan (AQP); and 3) does not disrupt or hinder implementation of any AQP control measures.

The Clean Air Plan contains 55 control measures under the following categories: stationary-source measures, mobile-source measures, transportation control measures, land use, and local impact measures and energy and climate measures. Many of these control measures require action on the part of the BAAQMD, CARB, or local communities, and are not directly related to the actions undertaken by an individual infrastructure project. While the Project could benefit from these actions, in no way would it prevent the BAAQMD from implementing these actions as none directly apply to the Project.

Construction activities would result in emissions well below the BAAQMD thresholds for criteria air pollutants. Operation of the Project would not result in any on-site emissions. As described in the Project Description, emergency wells would be operated on an as-needed basis during emergencies, such as a temporary outage of SCWA supplies. The emergency wells would be permitted to operate for no more than five consecutive days and 15 days a year and the primary power supply for the wells would be provided by PG&E. The emergency wells would normally be turned off, and would not be a substantial source of energy demand or air pollutants.

Implementation of the Project would not conflict with or obstruct implementation of the Bay Area 2010 Clean Air Plan. The impact would be less than significant.

III. b, c) Violate Air Quality Standard or Result in Cumulatively Considerable Net Increase of Any Criteria Pollutant for which the Region is in Non-Attainment – Less than Significant with Mitigation

Construction

The City of Santa Rosa is located within the San Francisco Bay Area Air Basin (Air Basin). The Air Basin is currently designated as a nonattainment area for suspended particulate matter (PM_{2.5} and PM₁₀) and ozone precursors including reactive organic gases (ROG) and nitrous oxides (NO_x). The Air Basin is in attainment (or unclassified) for all other air pollutants (BAAQMD 2013).

The BAAQMD CEQA Guidelines include thresholds of significance for construction-related criteria air pollutant and precursor emissions. In order to compare construction-related emissions to the BAAQMD thresholds, the emissions for construction of an emergency well facility were estimated using the California Emissions Estimator Model (CalEEMod), Version 2011.1.1. The construction-related emissions for a test well would be less than the emissions for construction of an emergency well, because test wells would not involve construction phases such as building construction and pipeline construction. Therefore, because construction emissions from the emergency wells are less than significant, as indicated below, construction emission from the test wells have not been calculated.

As shown in Table III-1, the estimated daily average construction-related emissions for construction of an individual emergency well facility are substantially less than the BAAQMD's thresholds. As described in the Project Description, emergency wells and test wells would be constructed over an approximately 15-year period. For the purpose of analysis, even if all four emergency wells that are proposed to be constructed in the near-term (next 5 years) were constructed simultaneously, the daily average construction-related emissions would still be less than the BAAQMD's thresholds.

Table III-1. Criteria Air Pollutant Construction Emissions

	ROG (lb/day)	NO_x (lb/day)	PM₁₀ (lb/day)	PM_{2.5} (lb/day)
Per Emergency Well Facility	0.78	5.63	0.97	0.39
Thresholds	54	54	82	54

Source: Illingworth and Rodkin, 2013a

However, independent of whether a project's construction-related emissions exceed applicable thresholds, the BAAQMD CEQA Guidelines recommend the implementation of basic construction measures to meet the best management practices threshold for fugitive dust (including PM₁₀ and PM_{2.5}). Implementation of the BAAQMD basic construction measures are also required by Policy OSC-J-1 of the Santa Rosa General Plan 2035. Therefore, because construction activities would generate fugitive dust, primarily as a result of construction activities such as excavation, grading, vehicle exhaust, and vehicle travel on paved and unpaved surfaces, the impact is considered potentially significant.

Mitigation Measure AQ-1: BAAQMD Basic Construction Measures

To limit dust, criteria pollutants, and precursor emissions associated with the construction activity, the City shall include following BAAQMD-recommended Basic Construction Measures in all construction contract specifications for the proposed 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;
- 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 pipeline replacement 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
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Implementation of Mitigation Measure AQ-1 would reduce construction-related fugitive dust emissions by requiring the implementation of the BAAQMD's basic construction measures in accordance with the BAAQMD Air Quality CEQA guidelines. With the implementation of Mitigation Measure AQ-1, the

construction impact of the Project relative to the violation of air quality standards or cumulatively considerable net increases in criteria air pollutants would be reduced to a less than significant level.

Operation

Because the well pumps and building lights are electric, no on-site emissions would occur during operations. Well facilities would have provisions for a drive-up portable generator connection, so that in the event of a power failure, the City could deliver a portable diesel-powered generator to the site, and the well pumps could continue to run during an emergency. However, the portable generators would only operate during periods of power outages when facility operations are vital during emergencies. This would be rare and, therefore, annual on-site emissions would not result in significant air quality impacts.

Operational emissions from implementation of the Project would be negligible, and potential impacts on air quality standards or air quality violations, including cumulatively considerable net increases in criteria air pollutants, would be less than significant.

III. d) Expose Sensitive Receptors to Substantial Pollutant Concentrations – Less than Significant with Mitigation

Construction

A preliminary screening level health risk assessment of Project construction activities associated with emergency wells and test wells was conducted to evaluate construction emissions of diesel particulate matter (DPM) and potential associated health risks on sensitive land uses within the City (Illingworth & Rodkin 2013a). Emissions from the different construction phases were computed and entered into a dispersion model that predicted the annual concentration that would occur at various distances around a construction site of an emergency well facility. The estimates are conservative, assuming nearly continuous exposure during construction.

Construction phases modeled include well drilling and well construction, site building and infrastructure preparation, building foundation construction, building construction, on-site pipeline construction, and paving and off-site pipeline construction.

The screening level health risk assessment uses the following BAAQMD thresholds to determine the potential for significant impacts:

- An excess cancer risk level of more than 10 in 1 million, or a non-cancer (chronic or acute) hazard index greater than 1.0.
- An incremental increase of more than 0.3 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) annual average $\text{PM}_{2.5}$.

The dominant wind direction in Santa Rosa is from the south, so the highest DPM concentrations and associated cancer risk occur to the north of a construction site. Wind flow from the east, particularly the northeast, is rare, so concentrations and risk to the west and southwest are lowest.

The estimated emissions rates for construction of test wells were below BAAQMD thresholds, and therefore, construction-related emissions on sensitive receptors related to test well construction would be less than significant.

Based on the estimated emissions rates for construction of emergency well facilities, sensitive receptors³ within an area 300 feet north to northeast of an emergency well facility construction site, as measured from the center of the construction site, could be exposed to emissions in excess of the BAAQMD thresholds for cancer risk levels. Therefore, depending on the location of future emergency wells, the impact would be potentially significant.

³ Sensitive receptors include residential uses, schools, and overnight health care facilities.

In addition, based on the estimated emissions rates for construction, annual average PM_{2.5} concentrations exceeding 0.3 µg/m³ would extend out approximately 130 feet north of an emergency well facility construction site, as measured from the center of the construction site. Therefore, sensitive receptors within 130 feet north of an emergency well construction site could be exposed to emissions in excess of BAAQMD thresholds for PM_{2.5}. The impact is considered potentially significant, depending upon location of the well.

The hazard index calculated for construction of an emergency well facility would be less than 0.1. Therefore, the impact of construction-related emissions on sensitive receptors related to non-cancer diseases would be less than significant. In addition, because pipeline construction is estimated to proceed at a rate of approximately 50 feet per day, sensitive receptors along a pipeline route would not be subject to substantial construction emissions for more than one to two days, and the impact from pipeline construction on health risk would be less than significant.

Mitigation Measure AQ-2: Reduce Health Risk from Emergency Well Construction

The City shall require construction activities to utilize off-road diesel-powered equipment that meets the U.S. EPA Tier 2 engine requirements for particulate matter emissions, if emergency wells are located within the following distances of sensitive receptors (i.e., residential uses, schools, and overnight health care facilities):

- Within 300 feet of sensitive receptors to the north of the emergency well, as defined as the area extending 300 feet to the north between the western and eastern limits of construction; and
- Within 300 feet of sensitive receptors to the northeast of the construction site, as defined as the area within the northeast quadrant within 300 feet of the emergency well.

Implementation of Mitigation Measure AQ-2 would reduce the exposure of sensitive receptors to substantial pollutant concentrations to a less-than-significant level by requiring off-road diesel-powered equipment to meet U.S. EPA Tier 2 engine requirements within specified distances of sensitive land uses. With this mitigation measure, the maximum cancer risk levels and annual average PM_{2.5} concentrations would be reduced to below BAAQMD thresholds identified earlier in this section.

Operation

Because the well pumps and building lights are electric, no on-site emissions and therefore no health risk would occur during operations.

Well facilities would have provisions for a drive-up portable generator connection, so that in the event of a power failure, the City could deliver a portable diesel-powered generator to the site, and the well pumps could continue to run during an emergency. However, the portable generators would only operate during periods of power outages when facility operations are vital during emergencies. This would be rare and, therefore, annual on-site emissions would not result in significant health risk.

III. e) Create Objectionable Odors – Less than Significant

Construction and Operation

Construction activities could 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. Therefore, construction of the Project would not generate objectionable odors that could affect a substantial number of people. The impact would be less than significant.

Operational activities would not cause objectionable odors that could affect a substantial number of people. Well facilities are not typically a source of odor complaints and are not listed by BAAQMD as a potential odor source (BAAQMD 2011). The proposed emergency wells would not produce direct emissions as they would be powered by electricity and chemicals used for disinfection would be stored inside the well facility buildings. In addition, the emergency wells would only be operated on an as-needed basis during emergencies and would normally be turned off. Therefore, the potential impact from odors during Project operation would be less than significant.

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

Discussion:**IV. a) Impacts to Special-Status Species – Less than Significant with Mitigation**

The biological evaluation of the study area identifies the presence of potential habitat for special-status plant and wildlife species, including raptors and migratory birds covered under the Migratory Bird Act. Information about special-status species and habitat types within the study area was obtained from the following sources:

- California Natural Diversity Database (CNDDDB 2013);
- California Wildlife Habitat Relationships (CDFW 2013);
- California Native Plant Society Online Inventory of Rare and Endangered Plants (CNPS 2013);
- California Vegetation (Holland and Keil, 1995);

- Terrestrial Vegetation of California (Barbour et al., 2007);
- National Oceanic and Atmospheric Association Fisheries (NOAA 2013);
- U. S. Fish and Wildlife Services (USFWS) online database for federal threatened, and endangered species (USFWS 2013); and
- Existing literature as cited in the text.

Construction

Special-Status Plants

Special-status plants are those listed as endangered or threatened by the USFWS or listed as endangered, threatened, a species-of-special concern, or rare by the State and CDFW. The USFWS provides an online service that lists special-status plants and wildlife species in the Santa Rosa area. CDFW provides a similar system known as the CNDDDB which also provides information regarding the locations where special-status species have been observed. The CNPS also has an inventory of rare and endangered plants and has a ranking system to categorize the degrees of concern for each plant in its inventory. In summary, plants are ranked as follows:

- Rank 1A: Plants presumed extinct in California;
- Rank 1B: Plants that are rare, threatened, or endangered in California and elsewhere;
- Rank 2: Plants that are rare, threatened, or endangered in California but more common elsewhere;
- Rank 3: Plants about which more information is needed; and
- Rank 4: Plants of limited distribution.

The CDFW validates the CNPS ranking system and includes most plants from the inventory in the CNDDDB database. CDFW also encourages protection of these plants through CEQA review, because it is possible that CNPS-listed plants could be afforded future federal or State protection.

The lands within the City's Urban Growth Boundary support a wide variety of special-status plant species, including state- and federally-endangered vernal pool plant species, such as Sonoma sunshine (*Blennosperma bakeri*), Burke's goldfields (*Lasthenia burkei*), and the many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*).

Test wells and emergency wells could be located in highly disturbed areas, in areas routinely maintained by mowing or clearing (i.e. City parks), or in areas with native vegetation. Plant communities throughout the City include urban/developed, oak woodlands, chaparral, mixed evergreen forests, riparian, riverine, lacustrine, non-native annual grassland, and ruderal areas. A total of 58 special-status plant species from the federal, State and CNPS databases are recorded for the Santa Rosa, Healdsburg, Calistoga, Mark West Springs, Kenwood, Glen Ellen, Cotati, Two Rock and Sebastopol USGS 7.5-minute quadrangles, which are the topographical maps applicable to the study area (Etchell 2013). Vegetation communities within the study area could support special-status plant species including oak woodlands, chaparral, mixed evergreen forests, riparian, riverine, and lacustrine environments.

The locations of the test wells, emergency well facilities and connection pipelines have not yet been determined. If such facilities were constructed in areas that support habitat for special-status plant species, such species could be impacted. The potential impact would be significant.

Mitigation Measure BIO-1a: Avoid Loss of Listed or CNPS List 1B Plants and their Habitats

The City shall avoid loss of state and federally listed or proposed plant species, state candidates for listing, CNPS List 1B species, and occupied or critical habitat for these species, to the extent feasible. Where avoidance of individuals or habitat is infeasible, the City shall compensate for loss as required by the U.S. Fish and Wildlife Service and/or CDFW.

For ground disturbance within vegetated areas (excluding landscape and ruderal areas), reconnaissance-level surveys shall be performed to determine whether the area affected may contain suitable habitat. If habitat for listed or CNPS List 1B plants is not identified during the surveys, then no further mitigation for impacts to target species are necessary under this measure. If the area does contain potential suitable habitat, protocol-level surveys to determine presence or absence of target species shall be conducted prior to construction wherever habitats for these species would be impacted, unless the City assumes presence of the species and implements compensatory measures.

The following measures are examples of those that would be required by the U.S. Fish and Wildlife Service and/or CDFW.

- Where project activities result in impacts to vernal pool habitats, the conservation measures described in the Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects that May Affect Four Endangered Plant Species on the Santa Rosa Plain, California (Corps File # 22342N) may need to be implemented.
- Listed or List 1B plants within the project footprint may need to be transplanted to a mitigation site approved by the California Department of Fish and Game and U.S. Fish and Wildlife Service. Seed from plants unavoidably impacted may need to be collected and preserved for planting on an approved mitigation site.
- Where construction activities unavoidably affect a listed or List 1B plant species, corridor widths may need to be limited to a maximum of 30 feet through plant habitat.
- All storage and staging areas may need to be located outside listed or List 1B plant habitat.

Mitigation Measure BIO-1b: Avoid Loss of Sensitive Plant Species

The City shall avoid loss of individuals of a CNPS List 2, 3, or 4 (sensitive) plant species if impacts exceed 10 percent of the known occurrences within Sonoma County. A qualified botanist or biologist shall evaluate proposed sites to determine the potential for CNPS List 2, 3, or 4 plants. If the botanist or biologist determines that the site could support special-status plant species, then surveys for sensitive plant species shall be conducted by a qualified botanist during the bloom period. If special-status plants are identified with the construction area, the City shall attempt to avoid loss by adjusting construction boundaries to avoid sensitive plants.

Implementation of Mitigation Measures BIO-1a and BIO-1b would reduce potential impacts to special-status plants to a less-than-significant level by requiring pre-construction surveys by a qualified biologist prior to work in applicable habitats to determine whether special-status plant species are present at or near construction areas, and by requiring measures to avoid loss of those species as well as a minimum level of compensation for loss of habitat for special-status plant species.

Special-Status Wildlife

Special-status wildlife are those listed as endangered or threatened by the USFWS and NOAA Fisheries; and wildlife that is listed as endangered, threatened, a species-of-special concern, or rare by the State and CDFW. The USFWS and CDFW provide databases for wildlife similar to those described for plants in the section above.

Evaluation of lands within the City's Urban Growth Boundary identified the presence of potential habitat for special-status wildlife species, including fish, reptiles, amphibians, mammals, and birds. Special-status wildlife species from the federal and State databases and NOAA websites were reviewed for the Santa Rosa, Healdsburg, Calistoga, Mark West Springs, Kenwood, Glen Ellen, Cotati, Two Rock and Sebastopol USGS 7.5-minute quadrangles, which are the applicable topographical maps for the study area. Table IV-1 summarizes the special-status wildlife species that have the potential to occur within the Urban Growth Boundary, including their federal and State status.

Table IV-1. Special-Status Wildlife Species Potentially Occurring within the City's Urban Growth Boundary

Wildlife Species		Status Federal/State
Scientific Name	Common Name	
<i>Syncaris pacifica</i>	California freshwater shrimp	FE/SE
<i>Ambystoma californiense</i>	California tiger salamander	FE/ST
<i>Rana boylei</i>	Foothill yellow-legged frog	--/SC
<i>Rana draytonii</i>	California red-legged frog	FT/SC
<i>Emys marmorata</i>	Western pond turtle	--/SC
<i>Elanus leucurus</i>	White-tailed kite	--/FP
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	FC/SE
<i>Athene cunicularia</i>	Burrowing owl	--/SC
<i>Agelaius tricolor</i>	Tricolored blackbird	--/SC
<i>Oncorhynchus mykiss irideus</i>	Steelhead – Central Coast	FT/--
<i>Oncorhynchus kisutch</i>	Coho salmon – Central Coast	FE/CE
<i>Mylopharodon conocephalus</i>	Hardhead	--/SC
<i>Antrozous pallidus</i>	Pallid bat	--/SC
<i>Taxidea taxus</i>	American badger	--/SC

Notes:

-- = No status

Federal:

FE = Listed as endangered under the Federal Endangered Species Act

FT = Listed as threatened under the Federal Endangered Species Act

State:

SE = Listed as endangered under the California Endangered Species Act

ST = Listed as threatened under the California Endangered Species Act

SC = Species of special concern under the California Endangered Species Act

FP = Fully Protected under the California Endangered Species Act

Invertebrates, Amphibians, Reptiles, and Fish

Test wells and emergency wells could be located in areas which have habitat for special-status wildlife, namely California freshwater shrimp, California tiger salamander, foothill yellow-legged frog, California red-legged frog, western pond turtle, steelhead, coho salmon, and hardhead.

The precise locations of the test wells, emergency well facilities and connection pipelines have not yet been determined; however, wells would not be located within 50 feet of water bodies in compliance with the City's Zoning Code Section 20-30.040. The City's Zoning Code requires a 50-foot setback from a waterway with a defined bank and a 50-foot setback from the 100-year storm level for a waterway without a defined bank. These requirements apply to both natural and modified waterways. Pipelines could be installed through a creek setback. Because breeding and foraging habitat for federally-listed and State-listed species, including the western pond turtle, California red-legged frog, and foothill yellow-legged frog, may extend more than 50 feet from a waterbody, impacts could be significant, depending upon the location of the proposed well.

It is possible that underground piping connecting emergency well facilities to utility systems could require crossings of streams. Santa Rosa Creek and other streams throughout the study area and the riparian vegetation along the channels may provide breeding and foraging habitat for other federally-listed and State-listed species, including California freshwater shrimp, breeding and foraging habitat for the western pond turtle, California red-legged frog, foothill yellow-legged frog, and fish.

As described in Section 1.5.2.2 in the Project Description, pipelines to be installed across a creek would be installed using either standard open-trench construction methods, or trenchless construction (HDD or jack and bore installation). Trenchless construction would consist of sending and receiving pits located outside the bed and bank of creeks, and would not alter the course of a creek or disturb riparian habitat. Therefore, creek crossings utilizing trenchless construction would not directly impact fish species during construction. However, the sending and receiving pits could be located in upland habitat areas that could affect special-status reptiles and amphibians. The impact would be significant. Creek crossings utilizing open-trench construction methods would require temporary disturbance to the bed and banks of a creek and could also have a significant impact on special-status species.

Mitigation Measure BIO-1c Protect Federally and State Listed Endangered Species

The City of Santa Rosa shall avoid loss of habitat or individuals of federally and State listed endangered species, to the extent feasible. Where avoidance of individuals or habitat is infeasible, the City shall compensate for loss as required by the U.S. Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Wildlife. For ground disturbance within areas of potential habitat of the listed species, reconnaissance-level surveys shall be performed to determine whether the area affected may contain suitable habitat. If the area does contain suitable habitat, protocol-level surveys to determine presence or absence of target species shall be conducted prior to construction wherever habitats for these species would be impacted, unless the City assumes presence of the species and implements compensatory measures.

The following measures are examples of those that would be required by the U.S. Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Wildlife.

California tiger salamander

- Potential habitat for the California tiger salamander is defined as land designated by the Santa Rosa Plain Conservation Strategy Map (last revised by CDFW on April 16, 2007) or any subsequent prevailing documents as requiring mitigation for impacts to the salamander.
- Mitigation for impacts to California Tiger Salamander habitat shall be as stipulated in the Santa Rosa Plain Conservation Strategy (USFWS 2005) or any subsequent guidance adopted by USFWS. Such documents include the Programmatic Biological Opinion for U.S. Army Corps of Engineers Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California (USFWS 2007). Interim mitigation ratios shall be used until the strategy is fully implemented. Mitigation lands shall be located within the watershed where the impact occurs. A conservation easement shall be placed on the mitigation site to preserve the site in perpetuity as wildlife habitat. A long-term management plan shall be developed for the mitigation site to be approved by the USFWS.
- Minimization measures contained in Section 5.2 (Minimization Measures) of the Santa Rosa Plain Conservation Strategy (USFWS 2005) or any subsequent guidance adopted by the USFWS shall be implemented during work within areas where California tiger salamanders may occur.
- Initial ground disturbing construction activities in habitat shall be limited to the dry season (June through October) when salamanders are not moving between terrestrial habitat and aquatic breeding habitat.

California red-legged frog

- Potential habitat for the California red-legged frog is defined as the area within 300 feet of the top of bank of a waterbody which the CNDDDB indicates has had sightings of the species within its watershed.
- Mitigation for impacts to California red-legged frog habitat (CRLF) shall be as stipulated in the U.S. Fish and Wildlife Service (USFWS) (1999) Programmatic Endangered Species Consultation to avoid impacts to California red-legged frog.
- Ground disturbing construction activities shall be limited to the dry season period from April 1 through November 1 to avoid potential red-legged frog dispersal events.
- A qualified biologist shall conduct a pre-construction survey immediately preceding any construction activity that occurs in potential CRLF habitat. If no CRLF are observed, wildlife exclusion fencing will be erected around the area to be excavated for the new pond to prevent CRLF from entering the excavation area during construction. Typical wildlife exclusion fence consists of 3-foot tall silt fence that is buried at least 6 inches in the ground.
- If CRLF are found, then the USFWS and CDFG shall be notified immediately, and instructions from the USFWS will be followed.
- Before the onset of any construction activities, the project engineer and USFWS-approved biologist shall identify locations for equipment, personnel access and materials staging other than those identified in the project description to minimize disturbance to red-legged frog habitat.

- Prior to the start of construction, a USFWS-approved biologist shall train all construction personnel regarding habitat sensitivity, identification of special status species, and required practices before the start of construction.
- Because dusk and dawn are often the times when CRLF are most actively foraging and dispersing, all construction activities shall cease one-half hour before sunset and shall not begin prior to one-half hour before sunrise.
- A USFWS-approved biologist shall be onsite during all ground-disturbance related activities (i.e., vegetation grubbing, excavation) to ensure compliance with these avoidance measures.
- After ground disturbing activities are complete, the USFWS-approved biologist or trained construction monitor shall complete a daily log summarizing activities and environmental compliance.
- If a CRLF is encountered during construction, all construction activities in the immediate area shall cease until the animal moves away of its own volition.
- The fueling and maintenance of vehicles and other equipment shall occur at least 20 meters from any riparian habitat or waterbody.
- To prevent CRLF from becoming entangled or trapped in erosion control materials, plastic mono-filament netting (i.e., erosion control matting) or similar material shall not be used within the action area. Acceptable substitutes include coconut coir matting or similar material.

California freshwater shrimp, steelhead (Central California Coastal ESU), and coho salmon (Central California Coastal ESU)

- Use tunneling methods to cross creeks with 1) surface flow at the time of construction and 2) occupied at any time of year by steelhead, coho salmon (collectively "listed salmonids"), or California freshwater shrimp. If bore pits are required, they shall be located outside the riparian corridor along occupied streams, and no vegetation shall be removed along the streambank.
- Open trenching across creeks is permissible with 1) no surface flow at the time of construction and 2) occupied at any time of year by listed salmonids or California freshwater shrimp, with approval of the resource agencies. The construction corridor at the crossing shall be restricted to 30 feet wide.
- All temporarily impacted habitat shall be restored to pre-project conditions upon completion of construction activities.

Mitigation Measure BIO-1d: Protect Special-Status Aquatic Species

Where pipelines must cross a creek, the City shall ensure that a qualified biologist conduct pre-construction surveys for special-status aquatic species before open-cut trenching across a creek. If any special-status species are found, the City shall avoid the creek, tunnel under the creek, or wait until the creek is dry. All temporarily impacted habitat shall be restored to pre-project conditions upon completion of construction activities.

Mitigation Measure BIO-1e: Protect Western Pond Turtle

Where pipelines must cross a creek, or where test wells or emergency wells are sited within 250 feet of a water body, the City shall ensure that preconstruction surveys for the western pond turtle shall be conducted by a qualified biologist. If western pond turtles are found during preconstruction surveys, CDFW shall be notified and individuals shall be captured by a qualified biologist and relocated to suitable areas. If preconstruction surveys identify active nests, a qualified biologist shall establish a no-disturbance buffer zone around the nest using temporary orange exclusion fencing. The radius of the buffer zone and the duration of the exclusion shall be determined in consultation with CDFW. The buffer zone and fencing shall remain in place until the young have left the nest, as determined by the biologist.

Mitigation Measure BIO-1f: Protect Yellow-legged Frog

Where pipelines must cross a creek, or where test wells or emergency wells are sited within 250 feet of a water body, the City shall ensure that preconstruction surveys for yellow-legged frogs shall be conducted by a qualified biologist. If potential habitat for the frog is identified, construction activities shall be scheduled so that they do not interfere with the reproductive cycles of the foothill yellow-legged frog, by restricting work within the ordinary high water zone and riparian zone of creeks to the period from June 15 to October 15. Work periods shall be timed to avoid the breeding season of the foothill yellow-legged frog, as well as the majority of the incubation period of frog eggs.

If work is required outside of the period from June 15 to October 15, the City shall retain a qualified wildlife biologist to conduct a pre-construction survey for foothill yellow-legged frog. The survey would be conducted within 24 hours prior to the start of construction activities in the creek. If a foothill yellow-legged frog or frog eggs are located in or adjacent to the construction zone, the biologist shall attempt to passively move the species out of the area or the biologist shall capture and move the yellow-legged frog or eggs downstream, out of the construction zone.

Implementation of Mitigation Measures BIO-1c through BIO-1f would reduce impacts to special-status invertebrates, amphibians, reptiles, and fish to less-than-significant levels by requiring pre-construction surveys by a qualified biologist prior to work in applicable habitats to determine whether special-status species are present at or near construction sites. Mitigation Measures BIO-1c through BIO-1f also provide measures to avoid take of species as well as a minimum level of compensation for loss of habitat for special-status wildlife species.

Special-Status Birds, Migratory Birds, and Raptors

Trees in the Project area provide potential habitat for special-status bird species, including white-tailed kite, western yellow-billed cuckoo, burrowing owl, and tricolored blackbird, as well as raptors and migratory bird species. Construction could result in tree removal or tree trimming which could result in impacts to special-status and migratory birds if present in trees. Construction noise could also disturb special-status and migratory birds nesting in trees near construction sites. Potential impacts on special-status and migratory birds that could result from construction could include the destruction of eggs or occupied nests, mortality of young, and the abandonment of nests with eggs or young birds prior to fledging. Such potential impacts on special-status and migratory birds could be significant.

Mitigation Measure BIO-1g: Protect Special-Status Birds, Migratory Birds and Raptors during Construction

The City shall ensure that preconstruction surveys for nesting special-status birds, migratory birds, or raptors are conducted for construction commencing between February 1 and October 15. Surveys shall be completed by a qualified wildlife biologist who is experienced in identifying birds and their habitat and surveys shall be completed within 14 days of construction. Trees within a minimum 300-foot radius of proposed construction shall be included in the survey.

If the biologist detects no active nesting by special-status or migratory birds or raptors, then work may proceed without restrictions. If migratory bird and/or active raptor nests are identified, the biologist shall determine whether or not construction activities might impact the active nest or disrupt reproductive behavior. If it is determined that construction would not affect an active nest or disrupt breeding behavior, construction may proceed without any restriction.

If the qualified biologist determines that construction activities would likely disrupt special-status birds, migratory birds, or raptor nesting activities, then a no-disturbance buffer around the nesting location shall be established to avoid disturbance or destruction of the nest site until after the breeding season or after a wildlife biologist determines that the young have fledged (usually late June through mid-July). The extent of these buffers would be determined by a wildlife biologist in consultation with the CDFW and would depend on the species' sensitivity to disturbance (which can vary among species); the level of noise or construction disturbance; line of sight between the nest and the disturbance; ambient levels of noise and other disturbances; and consideration of other topographical or artificial barriers. Typically a 50-foot buffer shall be required for passerines and a 250-foot buffer for raptors, however the wildlife biologist shall analyze and use the above factors in making an appropriate decision on buffer distances.

Implementation of Mitigation Measure BIO-1g would mitigate potential impacts on special-status and migratory birds to less-than-significant levels by requiring pre-construction surveys by a qualified biologist to determine whether special-status or migratory bird nests are present at or near a proposed project site.

Special-Status Bats

Trees and structures in the study area could provide potential habitat for special-status bat species, including pallid bat. The pallid bat is a state listed species of special concern that occurs in small numbers throughout most of California in lower elevations in a wide variety of habitats including grasslands, shrub lands, woodlands, and forests. They hibernate in the winter near the summer day roost. Maternity colonies form in early April and may have between a dozen to 100 individuals (Harris 2005). The young are born between April to July. Impacts on pallid bat could result from removal or trimming of mature trees, or removal of buildings or structures during construction. Potential impacts to pallid bats could be significant.

Mitigation Measure BIO-1h: Protect Special-Status Bats during Tree or Structure Removal

Not more than two weeks prior to removal of a building or structure, the City shall ensure that a qualified biologist (i.e., one familiar with the identification of bats and signs of bats) survey the building or structure for the presence of roosting bats or evidence of bats. If no roosting bats or evidence of bats are found in the structure, demolition may proceed. If the biologist determines or presumes bats are present, the biologist shall exclude the bats from suitable spaces by installing one-way exclusion devices. After the bats vacate the space, the biologist shall close off the space

to prevent recolonization. Building or structure demolition shall only commence after the biologist verifies seven to 10 days later that the exclusion methods have successfully prevented bats from returning. To avoid impacts on non-volant (i.e., non-flying) bats, the biologist shall only conduct bat exclusion and eviction from February 15 through April 15 and from August 15 through October 30.

Prior to the removal of large trees scheduled during seasonal periods of bat activity (February 15 through April 15 and August 15 through October 30), a qualified bat biologist shall conduct a bat habitat assessment to determine the presence of suitable bat roosting habitat. No more than 30 days before removal of any large tree or snag, a biologist familiar with identification of bats and signs of bats will conduct a pre-construction survey for signs of bat activity. If construction is postponed or interrupted for more than 30 days from the date of the initial bat survey, the biologist shall repeat the pre-construction survey.

If a tree provides potentially suitable roosting habitat, but bats are not present, bats shall be excluded by temporarily sealing cavities, pruning limbs, or removing the entire tree, in consultation with the qualified bat biologist. Trees and snags with cavities or loose bark that exhibit evidence of use by bats shall be scheduled for bat exclusion and/or eviction, conducted during appropriate seasons (i.e., February 15 through April 15 and August 15 through October 30) and supervised by the biologist.

Implementation of Mitigation Measure BIO-1h would reduce impacts on special-status bat species to less than significant by requiring pre-construction surveys and the avoidance of disturbance to roosting bats.

American Badger

The American badger is listed as a state species of special concern by CDFG. Construction could impact this species if burrows were encountered during ground-disturbing activities. Impacts to this species could be significant.

Mitigation Measure BIO-1i: Minimize Impacts to American Badger

The City shall ensure that a qualified biologist conduct a pre-construction survey for badger burrows for disturbance in annual grasslands. In the event that a badger burrow is identified within the limits of construction prior to ground-disturbing construction activities (e.g., grading, excavation, trenching), CDFW shall be contacted to determine if any setback requirements would be needed during construction or if active trapping and relocation is an option. If a suspected badger burrow is identified during construction, construction shall temporarily cease in the immediate area, until the CDFW has been contacted. The City shall relocate any badgers as directed by CDFG.

Implementation of Mitigation Measure BIO-1i, would reduce potential impacts on badger burrows to less than significant by requiring pre-construction surveys and the avoidance of disturbance during construction.

Operation

Following construction, operation of the Project would not require ground disturbance that would result in potential impacts to special-status plant or wildlife species. Operation of an emergency well at 700 gpm for 15 days of continuous operations would not affect water levels in creek or lakes if the well is located greater than 250 feet from a creek or lake in areas of the City on the west side of the Rodgers Creek fault, or greater than 75 feet in areas of the City on the east side of the Rodgers Creek fault (WYA 2013).

Although unlikely, operation of wells located within 250 feet of the west side of the fault and 75 feet on the east side of the fault could potentially reduce water levels in local creeks and lakes. Although water levels in creeks or lakes adjacent to emergency wells would recover quickly following completion of emergency pumping, the temporary water level reduction during emergency well operation could have a significant impact on special-status aquatic species from a temporary reduction in water levels and the impact could be significant.

Mitigation Measure HYD-3: Locate Emergency Wells to Reduce Impacts to Surface Water Bodies

(Described in Section IX, Hydrology Impact IX. b)

Mitigation Measure HYD-3 would reduce impacts on aquatic species from operation of an emergency well near a creek or lake to less-than-significant levels by requiring placement of the well greater than 250 feet or 75 feet from the waterbody depending on the location in relation to the Rodgers Creek fault, or by illustrating that operation of a closer well would not impact waterbodies and therefore not impact aquatic species. The impact following mitigation would be less than significant.

IV. b) Riparian or Sensitive Natural Community – Less than Significant with Mitigation

Construction and Operation

Sensitive natural communities within the City's Urban Growth Boundary include riparian areas, oak woodland, mixed evergreen forests, and chaparral. Wetlands, waters, and vernal pools are sensitive natural communities that are evaluated below under Checklist Question IVc. Policy OSC-D-9 of the Santa Rosa General Plan 2035 identifies actions to protect riparian habitat, including ensuring that construction adjacent to creek channels is sensitive to the natural environment, that natural topography and vegetation is preserved along the creek, and that construction activities do not disrupt or pollute waterways.

Test wells could cause a temporary impact to 15,000 square feet and a permanent loss of approximately 30 square feet of sensitive natural community for each facility. Emergency well facilities and pipelines could cause a temporary impact to 15,000 square feet and a permanent loss of up to 2,500 square feet of sensitive natural community for each facility.

The locations of the test wells and emergency wells have not yet been determined. Test wells and emergency wells could be located as close as 50 feet from a stream, creek, or other waterbody (Zoning Code Section 20-30.040), and could require vegetation removal, including potential tree removal and/or trimming within riparian habitat. Therefore, construction of test wells and emergency wells could have a significant impact on riparian habitat and other sensitive natural communities.

In addition, it is possible that underground piping connecting emergency well facilities to utility systems could require crossings of streams. As described in the Project Description, pipelines would be installed below ground using either standard open-trench construction methods, or trenchless construction (HDD or jack and bore installation). Trenchless construction would consist of sending and receiving pits located outside the bed and bank of creeks, and would not alter the course of a creek but could disturb riparian habitat. Creek crossings utilizing open-trench construction methods would require vegetation removal, including potential tree removal and/or trimming within riparian habitat. Therefore, creek crossings could have a significant impact on riparian habitat and other sensitive natural communities.

Following construction, operation of the Project would not require ground disturbance that would result in potential impacts to riparian habitat or other sensitive natural communities. Therefore, no operational impact would occur.

Mitigation Measure BIO-2: Avoid or Compensate for Loss of Sensitive Natural Communities

If oaks or evergreen trees greater than 5 inches dbh (diameter at breast height) or chaparral need to be removed for construction of the facility, the City shall retain a qualified biologist to determine if the trees or chaparral is part of a sensitive natural community. Any loss of oak woodland, mixed evergreen forest, or chaparral sensitive natural communities shall be avoided.

If test wells or emergency wells are located within potential riparian vegetation, or if pipelines are installed across creeks, and open-trench alignments or tunneling pits are located within riparian vegetation, then the City shall conduct pre-construction surveys to identify the extent of riparian vegetation. If the location of the wells or pipelines would cause loss of riparian vegetation, the City shall retain a licensed landscape architect or qualified field biologist to develop a riparian revegetation plan. The riparian revegetation plan shall be based on guidelines maintained by the City and shall include replanting (either on-site or off-site). The goal of such a plan is to ensure no net loss of acreage or of functional value of riparian habitat. The plan shall include planting requirements, monitoring requirements, and an adaptive management strategy, and the City shall implement the plan's provisions.

Implementation of Mitigation Measure BIO-2 would require avoidance of all impacts to oak woodland, mixed evergreen forest or chaparral sensitive natural communities and would mitigate potential impacts to riparian vegetation and habitat from construction activities by requiring riparian vegetation planting and monitoring to ensure no loss of acreage of riparian habitat.

IV. c) Wetlands – Less than Significant with Mitigation

Construction and Operation

The Santa Rosa General Plan 2035 identifies policies to protect wetlands, such as Policy OSC-D-1 which requires conservation of wetlands and compliance with a no-net-loss policy through avoidance of sensitive habitat and compensatory mitigation such as restoration or creation. Policy OSC-D-2 aims to protect high quality wetlands and vernal pools from development.

The locations of the test wells and emergency well facilities and pipelines are not currently known. Depending on the location of well sites, test wells and emergency well facilities could potentially result in temporary or permanent fill of federally- and State-protected wetlands or waters that may be present on some parcels. Pipelines constructed outside of roadways could also result in temporary disturbance to wetlands during construction if wetlands are present in the area. The impact could be significant.

Following construction, operation of the Project would not require ground disturbance that would result in potential impacts to wetlands or waters. Therefore, no operational impact would occur.

Mitigation Measure BIO-3: Protect Wetlands and Waters

The City shall conduct a wetlands study for areas that will be permanently or temporarily disturbed to confirm the location, extent, and regulatory status of wetland and water features within the affected parcel. Sites that are entirely paved, compacted, or maintained landscaped areas are not subject to this measure. If jurisdictional waters cannot be avoided, the City shall obtain a Clean Water Act (CWA) Section 404 permit from the United States Army Corps of Engineers and a Section 401 permit from the North Coast Regional Water Quality Control Board and shall implement the permit requirements.

The City shall ensure that the project will result in no net loss of waters of the U.S. or State by requiring mitigation through impact avoidance, impact minimization, and/or compensatory mitigation for the impact, as determined in the CWA Section 404/401 permits.

Compensatory mitigation may consist of the following:

- Obtaining credits from a mitigation bank.
- Making a payment to an in-lieu fee program that will conduct wetland, stream or aquatic resource restoration, creation, enhancement, or preservation activities (the sum of money paid would be determined during negotiations between the federal, State, and local agencies involved).
- Providing compensatory mitigation through aquatic resource restoration, establishment, enhancement, and/or preservation activity.

Implementation of Mitigation Measure BIO-3 would reduce impacts to a less-than-significant-level through implementation of a compensatory mitigation program for impacts to wetlands that cannot be avoided.

IV. d) Movement of Fish or Wildlife Species – Less than Significant with Mitigation

Construction

Policy OSC-D-3 of the Santa Rosa General Plan 2035 directs the City to preserve and restore the elements of wildlife habitats and corridors throughout the Planning area.

The 15,000-square foot construction zone for test wells and emergency well facilities would not be large enough to substantially interfere with the movement of any terrestrial wildlife species or to block terrestrial wildlife corridors. It is possible that pipelines connecting emergency well facilities to utility systems could require crossing of streams. As described in the Project Description, pipelines would be installed below ground using either standard open-trench construction methods, or trenchless construction (HDD or jack and bore installation). Trenchless construction would consist of sending and receiving pits located outside the bed and bank of creeks, and would not alter the course of a creek. Therefore, creek crossings utilizing trenchless construction would have a less than significant impact on interference with the movement of aquatic species. Creek crossings utilizing open-trench construction methods would require work in and adjacent to creek channels which could temporarily impede movement of native resident or migratory aquatic species. Therefore, creek crossings utilizing open-trench construction could have a significant impact on wildlife movement.

Mitigation Measure BIO-1c: Protect Federally and State Listed Endangered Species

Mitigation Measure BIO-1d: Protect Special-status Aquatic Species

Mitigation Measure BIO-1e: Protect Western Pond Turtle

Mitigation Measure BIO-1f: Protect Yellow-legged Frog

Mitigation Measure BIO-2: Avoid or Compensate for Loss of Sensitive Natural Communities

Implementation of Mitigation Measures BIO-1c through BIO-1f and BIO-2 would reduce impacts to native resident or migratory fish or wildlife species through selection of work timeframes to avoid migration periods and by providing bypass and/or relocation of special-status aquatic species during construction activities. The impacts would be less than significant.

Operation

Test wells and emergency well facilities would not interfere with the movement of any native resident or migratory fish. Additionally, the test wells and emergency well facilities would not be of a scale that would substantially interfere with the movement of any wildlife species or wildlife corridors. The operational impact would be less than significant.

IV. e) Conflict with Local Policies or Ordinances – Less than Significant with Mitigation

Construction and Operation

The Santa Rosa General Plan 2035 contains numerous goals, policies and action items to protect biological resources. The policies require conservation of wetlands and waterways so that there is no net loss of wetlands, preservation of significant vegetation and trees, and ensuring construction adjacent to creek channels is sensitive to the natural environment. Because implementation of the Project would potentially conflict with applicable City policies and ordinances protecting biological resources, as identified in the previous impact discussions regarding special-status species, riparian vegetation, and wetlands, the impact is considered significant.

In addition, the City's tree ordinance effectively applies to any woody plant having a diameter of four inches or more. It also identifies numerous trees, including heritage trees and street trees, which are protected by Santa Rosa City Code Chapter 17-24, Ordinance 2858. As described in the Project Description, it is possible that vegetation removal would be required at sites, including potential tree removal and/or trimming. The impact could be significant.

Following construction, operation of the Project would not require ground disturbance or other activities that would conflict with policies or ordinances protecting biological resources. Therefore, no operational impact would occur.

Mitigation Measure BIO-1a: Avoid Loss of Listed or CNPS List 1B Plants and their Habitats

Mitigation Measure BIO-1b: Avoid Loss of Sensitive Plant Species

Mitigation Measure BIO-1c: Protect Federally and State Listed Endangered Species

Mitigation Measure BIO-1d: Protect Special-status Aquatic Species

Mitigation Measure BIO-1e: Protect Western Pond Turtle

Mitigation Measure BIO-1f: Protect Yellow-legged Frog

Mitigation Measure BIO-1g: Protect Special-status Birds, Migratory Birds and Raptors during Construction

Mitigation Measure BIO-1h: Protect Special-status Bats during Tree or Structure Removal

Mitigation Measure BIO-1i: Minimize Impacts to American Badger

Mitigation Measure BIO-2: Avoid or Compensate for Loss of Sensitive Natural Communities

Mitigation Measure BIO-3: Protect Wetlands and Waters

Mitigation Measure BIO-4: Comply with City of Santa Rosa Tree Ordinance

The City shall replace any protected or heritage trees in accordance with tree replanting requirements indicated in Santa Rosa Municipal Code Chapter 17-24. Replacement trees shall be planted on the Project site; however, if the Project site is inadequate in size to accommodate the

replacement trees, the trees shall be planted on public property with the approval of the Director of the City's Community Development Department.

Mitigation Measures BIO-1a through BIO-1i, BIO-2, BIO-3, and BIO-4 would ensure that implementation of the Project would not conflict with City policies and ordinances protecting biological resources, as explained above under Impacts VI.a through IV.e.

IV. f) Habitat Conservation Plan or Natural Community Conservation Plan – No Impact

No adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan exists for the Project area. The western portion of the City's Urban Growth Boundary is included within the Santa Rosa Plain Conservation Strategy (SRPCS) study area. Several local jurisdictions, including the City of Santa Rosa, have adopted the SRPCS Agreement that supports the conservation approach set forth in the Strategy and recognizes that a number of important implementation issues still need to be finalized before the Strategy can be put into full effect. An implementation plan has yet to be finalized for the Strategy. No impact would occur.

	Potentially Significant Impact	Less-Than- Significant With Mitigation Incorporation	Less- Than- Significant Impact	No Impact
V. CULTURAL RESOURCES				
Would the Project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?		✓		
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		✓		
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		✓		
d. Disturb any human remains, including those interred outside of formal cemeteries?		✓		

Discussion:

The Anthropological Studies Center at Sonoma State University (ASC) conducted a cultural resources record search at the Northwest Information Center (NWIC) for the proposed Project in April 2013 (ASC 2013). The NWIC records search included the geographic area of the City's Urban Growth Boundary. A pedestrian survey was not undertaken for this Initial Study, because specific locations for test wells and emergency wells have not been identified.

The record search identified 118 historic resources, 149 prehistoric/indigenous resources, and 24 resources that had both prehistoric and historical elements (ASC 2013). Areas of high indigenous archaeological sensitivity are found in several large areas throughout the groundwater master zones, including corridors of several creeks, ridgelines and hills, the Los Guilicos complex, and other creeks and springs. Generally speaking, areas with spring and natural creek courses are considered highly sensitive for containing archaeological resources (ASC 2013).

V. a) Historical Resources – Less than Significant with Mitigation**Construction and Operation**

The cultural resources records search prepared for the Project indicates the presence of over 100 historic resources identified in various areas of the City. The records search did not differentiate between historic-era buildings and historic-era archaeological sites. However, according to the City of Santa Rosa General Plan 2035 EIR, the City has 14 buildings and one district listed on the National Register of Historic Places; three sites listed as California Historical Landmarks; and 69 additional buildings and structures with paperwork on file at the NWIC (Santa Rosa 2009b). Additionally, 21 local landmarks and eight historic preservation districts are identified in the City, with the historic preservation districts concentrated within or adjacent to the downtown area (Central City groundwater master zone). There are also 50 historic-era archaeological resources recorded in the City planning area (Santa Rosa 2009b)⁴.

Santa Rosa General Plan 2035 policies are in place to protect historical resources, such as Policy HP-B-1, which aims to ensure that alterations to historical buildings and their surrounding settings are compatible with the character of the structure and the neighborhood. Policy HP-B-2 seeks to preserve

⁴ Resources may be classified as more than one category. Therefore, the number of resources listed under each category should not be added together to determine the total number of resources.

significant historical structures, while Policy HP-B-8 requires preserving sites that are eligible for the National Register of Historic Places.

Potential significant impacts on historic resources could still occur if proposed test well or emergency well construction activities or operation result in disturbance to, or are located immediately adjacent to, historical structures. Siting and operation of emergency wells could affect historical resources if the Project facilities alter the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired. Therefore, the potential impact of the Project would be significant. In addition, the Project could affect historic resources by siting on or near a historic resource or within a historic district or by encountering subsurface historic-era resources. Such impacts could be significant.

Mitigation Measure CR-1: Identify and Avoid or Minimize Impacts to Historical Resources

Prior to ground-disturbing activities, a literature and archival records search shall be conducted to identify known historical resources within or near the Project facility. If potentially historic resources or buildings older than 45 years are located within 100 feet of the Project facility, then a qualified historian or historical architect shall be retained to perform an evaluation of the potential historical resource and determine whether the Project facility would materially impair the resource. If the resource is determined to qualify as a historical resource under CEQA Guidelines section 15064.5(a) and the Project facility would materially impair the resource, such impacts to the historical resource shall be avoided. The improvement shall be designed, constructed, and operated to avoid material impairment of the historical resource. Measures may include, for example, temporary protective barriers, construction worker training, movement of the facility, architectural design changes, or landscape screening.

If subsurface historical materials are encountered during construction activities, the piece of equipment that encounters the materials shall be stopped, and the find inspected by a qualified historian/archaeologist. Project personnel shall not collect historical materials. If the historian/archaeologist determines that the find qualifies as a unique historical resource for purposes of CEQA (CEQA Guidelines Section 15064.5(c)(3)), all work must be stopped in the immediate vicinity to allow the archaeologist to evaluate any materials and recommend appropriate treatment. Such treatment and resolution shall include either modifying the Project to allow the materials to be left in place or undertaking data recovery of the materials in accordance with standard archaeological methods. The preferred treatment of the resource is protection and preservation.

Mitigation Measure CR-1 would reduce impacts to less-than-significant levels by requiring avoidance of material impairment of qualified historical resources. Additionally, compliance with Santa Rosa General Plan 2035 Policies H-B-1, H-B-2, and H-B-8 would avoid significant impacts to historic resources by requiring preservation of significant historic structures and sites eligible for listing in the National Register of Historic Places, and ensuring that any alterations to historic buildings' surrounding settings are compatible with the character of the structure and neighborhood, and, to a reasonable extent, in compliance with the Secretary of Interior's Standards for Rehabilitation. Therefore, the Project's impact to historical resources following mitigation would be less than significant.

V. b,d) Archaeological Resources or Human Remains – Less than Significant with Mitigation

Archaeological sites are located in various areas of the City (ASC 2013). Goal HP-A of the Santa Rosa General Plan 2035 is to protect Native American heritage. Policies HP-A-1 through HP-A-5 require proposed developments to determine whether project areas contain known archaeological resources or potential for such resources; require that project areas potentially containing significant archaeological resources be examined by a qualified consulting archaeologist for recommendations concerning protection and preservation; require measures to protect archaeological resources and human remains in the event that they are encountered; and require consultation with local Native American tribes.

Construction of emergency wells and test wells would require ground disturbance and excavation (e.g., grading, pipeline trenching, building foundations to a depth of approximately 10 feet, and well drilling to a depth of approximately 1,000 feet), and archaeological resources or human remains could be encountered during these activities. The potential impact to archaeological resources and human remains is therefore considered significant, given the potential for damage to such resources to occur during ground-disturbing construction activities.

Mitigation Measure CR-2: Identify and Avoid or Minimize Impacts to Archaeological Resources

Prior to ground-disturbing activities, a literature and archival records search shall be conducted to identify known archaeological resources within the Project facility. If archaeological resources are located within the Project site, then a qualified archaeologist shall be retained to perform an evaluation of the potential resource. If the resource is determined to qualify as an archaeological resource for purposes of CEQA (CEQA Guidelines Section 15064.5(c)) and the Project facility would adversely effect the resource, such impacts to the archaeological resource shall be avoided. The improvement shall be designed, constructed, and operated to avoid material impairment of the resource. Measures may include, for example, temporary protective barriers, construction worker training, or movement of the facility.

If archaeological materials are encountered during construction activities, the piece of equipment that encounters the materials shall be stopped, and the find inspected by a qualified archaeologist. Project personnel shall not collect cultural materials. If the archaeologist determines that the find potentially qualifies as a unique archaeological resource for purposes of CEQA (CEQA Guidelines Section 15064.5(c)(3)), all work must be stopped in the immediate vicinity to allow the archaeologist to evaluate any materials and recommend appropriate treatment. Such treatment and resolution shall include either modifying the Project to allow the materials to be left in place or undertaking data recovery of the materials in accordance with standard archaeological methods. The preferred treatment of the resource is protection and preservation.

Mitigation Measure CR-3: Procedures for Encountering Human Remains

California Health and Safety Code Section 7050.5 states that it is a misdemeanor to knowingly disturb a human grave. If human graves are encountered, the City and its Contractor shall ensure that work shall halt in the vicinity and the County Coroner shall be notified. At the same time, a qualified archaeologist shall be contacted to evaluate the situation. If human remains are of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of identification, pursuant to Public Resources Code 5097.98.

Mitigation Measure CR-2 would reduce the impact to archaeological resources that may be encountered during construction by protecting, preserving, or recovering any significant resources. Mitigation Measure

CR-3 would reduce the impact from discovery of human remains by providing standard procedures in the event that human remains are encountered and requiring adherence to Public Resources Code Section 5097.98 requiring Native American tribal notification. The impact to potentially unknown archaeological resources or human remains following mitigation would be less than significant.

V. c) Paleontological or Unique Geological Resources – Less than Significant with Mitigation

Construction and Operation

Paleontological resources are the remains or traces of prehistoric animals and plants. Ground-disturbing construction activities (e.g, grading, pipeline trenching, building foundations, and well drilling) have the potential to encounter paleontological resources. The Santa Rosa General Plan 2035 EIR does not identify paleontological resources or unique geologic features in the City (Santa Rosa 2009b). Therefore, implementation of the Project is not anticipated to destroy a known unique paleontological resource or site or unique geologic feature. However, the potential impact to paleontological resources is considered significant, given the potential for unanticipated discoveries to occur during ground-disturbing construction activities.

Mitigation Measure CR-4: Avoid or Document Unknown Paleontological Resources

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.

Mitigation Measure CR-4 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.

	Potentially Significant Impact	Less-Than- Significant With Mitigation Incorporation	Less- Than- Significant Impact	No Impact
VI. GEOLOGY AND SOILS				
Would the Project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.		✓		
ii. Strong seismic ground shaking?			✓	
iii. Seismic related ground failure, including liquefaction?		✓		
iv. Landslides?		✓		
b. Result in substantial soil erosion or the loss of topsoil?			✓	
c. Be located on 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 risks to life or property?		✓		
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				✓

Discussion:**VI. a.i) Fault Rupture – Less than Significant with Mitigation****Construction and Operation**

The Rodgers Creek fault zone is an active, north-to-south trending Alquist-Priolo earthquake fault that bisects the City, including portions of the S-1, S-4, S-9 and Central City operational master zones, and which also crosses the Santa Rosa Aqueduct that delivers water from the SCWA. The USGS estimates that there is a 31 percent chance of a magnitude 6.7 or higher earthquake occurring on the Rodgers Creek fault zone between 2007 and 2036 (USGS 2009).

Policy NS-C-1 of the Santa Rosa General Plan 2035 requires appropriate geologic studies to identify fault trace locations within active fault zones delineated on the Alquist-Priolo Earthquake Fault Zoning Act. Implementation of the Project would include test wells, emergency well facilities, and pipelines at various locations within the City's Urban Growth Boundary. None of the proposed facilities to be constructed as

part of implementation of the Project would include structures intended for permanent human occupancy. However, in the event that a new emergency well facility or transmission pipeline is constructed within or across the Rodgers Creek fault zone, the potential for the well facility or pipeline to be damaged due to fault rupture would be significant.

Mitigation Measure GEO-1: Siting of Facilities to Avoid Alquist-Priolo Fault Zones

The City of Santa Rosa shall avoid siting new test wells, emergency well facilities, and pipelines within the Rodgers Creek Alquist-Priolo Earthquake Fault Zone. If a pipeline is to be located within Rodgers Creek fault zone, the City shall utilize a professional geotechnical engineer and, when appropriate, a structural engineer to conduct design-level geotechnical investigation to locate faults and identify the appropriate setback between the fault and the facilities. The recommendations made in the geotechnical study shall be incorporated into the final plans and specifications and implemented during construction.

The geotechnical study shall identify hazards due to the fault zone, and provide engineering design and construction recommendations to prevent damage. This may include, but would not be limited to, one or more of the following:

- At the fault crossing where adequate room exists, trenches can be designed so that a buried pipe could deform and accommodate fault slip without failing.
- Design pipeline trenches, pipe embedment with sloping sidewalls, and use pipe embedment materials that offer flexibility with ground movements.
- If the pipe runs parallel to a fault, use steel or HDPE pipe with restrained joints as appropriate for the setting.
- For fault rupture (the fault slips at or very close to the facility location), if it is not practical to design for the large potential displacements, prepare a contingency plan to repair the pipe (have available sections of pipe and plan to expedite repair).
- For creep (one side of the fault is slowly moving relative to the other), install a "rattle box", where the pipe crosses the fault in a box rather than direct burial.
- Specify special classes or types of pipelines crossing the active fault zones, such as restrained joint or welded steel pipes.
- Install shut-off valves at key locations beyond the limits of the fault zone.

Implementation of Mitigation Measure GEO-1 would prevent the siting of emergency well facilities within an Alquist-Priolo Earthquake Fault Zone, and would require geotechnical investigations for any associated pipelines that may be sited within such a fault zone. The mitigation measure would require use of construction techniques that would also reduce the likelihood of pipeline rupture. Therefore, with implementation of Mitigation Measure GEO-1, the impact related to fault rupture would be less than significant.

VI. a.ii) Strong Ground Shaking – Less than Significant

Construction and Operation

Areas of violent to very violent groundshaking are expected to occur during an earthquake on the Rodgers Creek fault zone (as shown on Figure 12-3 of the Santa Rosa 2035 General Plan, Santa Rosa 2009a), including portions of the City's Central City, S-1, S-6, and S-9 operational master zones. Strong ground shaking could also occur from earthquakes on other principal faults in the region, including the

Hayward fault, San Gregorio-Hosgri fault, the Calaveras fault, and the Concord-Green Valley fault. Therefore, implementation of the Project would include emergency well facilities, and pipelines that are likely to be exposed to strong ground shaking during their operational life.

None of the proposed facilities to be constructed as part of implementation of the Project would include structures intended for permanent human occupancy. New emergency well facilities would be required to be designed and constructed in conformance with the latest edition of the California Building Code standards for earthquake resistant construction and engineering standards of practice. Therefore, the Project impact related to seismic ground shaking would be less than significant.

VI. a.iii, a.iv, c, and d) Seismic Related Liquefaction, Landslides, Unstable Soils, and Expansive Soils – Less than Significant with Mitigation

Construction and Operation

The range of soil types within the City includes clayey alluvial soils, riverwash, as well as some silty and gravelly soils and loams (Santa Rosa 2009a). The most prominent soil types in the City include the Zamora silty clay loam, as well as the Arbuckle, Clear Lake, Guenoc, Haire Clays, Spreckles, Wright and Yolo soil series (Santa Rosa 2009b).

Policy NS-C-2 of the Santa Rosa General Plan 2035 requires geotechnical investigations prior to development approval, where applicable, that includes evaluation of landslide risk, liquefaction potential, or weak and expansive soils.

Liquefaction

Regional mapping of liquefaction susceptibility indicates that the majority of soils in the City have very low to moderate liquefaction potential, with some areas adjacent to creeks having high liquefaction potential (USGS 2006). In the event that a new emergency well facility or pipeline is sited in an area with moderate to high liquefaction susceptibility, the potential for the well facility to be damaged from seismically-induced liquefaction would be significant.

Landslides and Slope Stability

Regional landslide mapping indicates that the majority of the City's Urban Growth Boundary is characterized as flatland, which is defined as areas of gentle slope at low elevation that have little or no potential for the formation of slumps, transitional slides, or earth flows except along stream banks or terrace margins (USGS 1998). Figure 7-3 of the City of Santa Rosa General Plan 2035 identifies areas where slopes exceed 10 percent (Santa Rosa 2009a), which are generally located in the eastern portion of the City, including portions of the S-1, S-4, S-6, S-9, S-12, and Oakmont operational master zones. In the event that a new emergency well facility is sited in an area with slopes exceeding ten percent, the potential for the well facility to be damaged from a landslide would be significant.

Expansive Soils

The Sonoma County Soil Survey indicates that the shrink-swell potential of soils within the City ranges from low to high (USDA 1972). The placement of structures directly on expansive soils can result in long-term structural damage from expansion and contraction. Therefore, in the event that a new emergency well facility is sited in an area with expansive soils, the potential for the well facility to be damaged from expansion and contraction of the soils would be significant.

Mitigation Measure GEO-2: Reduce Risk of Damage from Unstable Soils

If emergency well facilities are constructed in areas with slopes exceeding ten percent, as shown on Figure 7-3 of the Santa Rosa General Plan 2035, or in areas of high liquefaction potential, as shown on USGS Open File Report 06-1037, Liquefaction Susceptibility, or in an area with soils with high shrink-swell potential, as indicated in the Sonoma County Soil Survey, then the City shall require a design-level geotechnical study be prepared for the emergency well facility. Such well facilities shall be designed and constructed in conformance with the specific recommendations contained in the design-level geotechnical study, including recommendations for grading, ground improvement, and foundation support. The recommendations made in the geotechnical study shall be incorporated into the final plans and specifications and implemented during construction.

The geotechnical study shall identify and propose measures for any soils or geological problems that may affect site stability or structural integrity, including landslide risk, liquefaction potential, seismically-induced landsliding, or weak and expansive soils. This may include, but would not be limited to, one or more of the following:

- Removal and replacement of unstable materials in an existing landslide or in an actively eroding area with a stronger material.
- Retaining walls or other external applications to strengthen slopes.
- Removal of native soil and replacement with an engineered fill material not prone to shrinking and swelling or liquefaction.
- Soil stabilization, such as lime treatment to alter soil properties to reduce shrink-swell potential to an acceptable level

Implementation of Mitigation Measure GEO-2 would require design-level geotechnical studies for sites located on potentially unstable soils prior to construction that would evaluate the need for soil stabilization measures. In addition, geotechnical investigations would be required for sites located in areas containing unstable soils that would assure site stability and structural integrity. With implementation of Mitigation Measure GEO-2, the Project impact related to unstable soils, including liquefaction, slope instability, and expansiveness would be reduced to a less-than-significant level.

VI. b) Soil Erosion and Loss of Top Soil – Less than Significant

Construction and Operation

Implementation of the Project would include construction activities requiring temporary disturbance of soils, which if not properly managed, could result in localized areas of soil erosion. The City's Municipal Storm Water Permit requires implementation of controls during construction to prevent erosion and sediment loss, including a minimum set of best management practices (BMPs) to be implemented at construction sites less than one acre in size (RWQCB 2009), which would apply to the Project. Required BMPs include scheduling to sequence construction activities with the installation of erosion and sediment control measures, preserving existing vegetation as an effective form of erosion control, and installing silt fencing, sand bag barriers, stabilized construction site entrances, and other erosion and sediment control measures (RWQCB 2009). Because construction activities associated with implementation of the Project would be required to implement erosion controls, it is reasonable to anticipate that substantial erosion would not occur during construction. Therefore, the impact on soil erosion would be less than significant.

In the event that new test wells and emergency wells are located in previously undisturbed, vegetated locations, then construction activities could result in small localized losses of top soil. However, given the relatively small size of the construction area boundary for individual test well and emergency well facility sites, such losses of top soil would be negligible. In addition, as described above, construction activities associated with implementation of the Project would be required to implement erosion controls in accordance with the City's Municipal Storm Water Permit. Consequently, no substantial loss of topsoil due to erosion or grading is anticipated during implementation of the Project. The impact would be less than significant.

VI. e) Septic Tanks – No Impact

Implementation of the Project would not result in the construction of septic systems or other alternative wastewater disposal systems. No impact would occur.

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporation	Less-Than-Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS				
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?		✓		

Discussion:

The State of California has set greenhouse gas (GHG) reduction goals through the passage of Assembly Bill 32 (AB 32), the “Global Warming Solutions Act.” AB 32 aims at reducing GHG emissions to 1990 levels by 2020. The Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines (Guidelines) have established GHG thresholds of significance in order to meet the goals of AB 32. The BAAQMD Guidelines contain the following operational thresholds (the Guidelines do not contain construction thresholds):

- GHG operational thresholds for Land Use projects are:
 - o compliance with a Qualified GHG Reduction Strategy; or
 - o 1,100 metric tons (MT) of CO₂ equivalent (CO₂e) per year; or
 - o 4.6 MT CO₂e per service population (residents plus employees) per year

The City of Santa Rosa adopted a Climate Action Plan (CAP) on June 5, 2012. The CAP includes goals, measures, and action items to achieve the AB 32 state-recommended reduction targets, as well as a locally adopted reduction target of 25% below 1990 levels by 2015. The goals deal mostly with energy efficiency, conservation, parking and land use management, improved transport and vehicular travel, waste reduction, and other issues related to new development. The CAP also includes goals for water and wastewater operations, one of which is directly applicable to the Project, and goals and action items related to construction activities that would apply to the Project. The City of Santa Rosa’s CAP has been assessed by the BAAQMD as meeting the standard elements laid out in the BAAQMD’s CEQA Guidelines for a Qualified GHG Reduction Strategy. Therefore, the project’s compliance with the City’s CAP is used in the following analysis, rather than the 1,100 MT or 4.6 CO₂e thresholds.

VII. a, b) Generation of Greenhouse Gas Emissions or Conflict with an Applicable Plan, Policy, or Regulation – Less than Significant with Mitigation

Construction

Construction activities that would result in GHG emissions include exhaust emissions from haul trucks, worker commute vehicles, and construction equipment. The BAAQMD has not adopted a threshold for construction-related GHG emissions. Goal 9 of the City’s CAP seeks to reduce emissions from construction activities. Attainment of this goal is sought through implementation of Actions 9.2.1, 9.2.2, and 9.2.3 of the CAP, which are intended to reduce emissions from heavy-duty construction equipment by limiting idling and utilizing cleaner fuels, equipment, and vehicles. Construction activities associated with

construction of the Project may conflict with the actions outlined in the CAP to reduce construction-related GHG emissions, and therefore, the impact could be significant.

Mitigation Measure GHG-1: Reduce Emissions from Construction Activities

The City and its contractors shall implement actions 9.2.1 through 9.2.3 of the City's CAP during construction, as follows:

- Action 9.2.1 - Minimize idling times either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes or less (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Provide clear signage at all access points to remind employees of idling restrictions.
- Action 9.2.2 - Construction equipment shall be maintained in accordance with manufacturer's specifications.
- Action 9.2.3 - Work with project applicants to limit GHG emissions from construction equipment by selecting one of the following measures, as feasible and appropriate to the construction project:
 - a. Substitute electrified equipment for diesel- and gasoline-powered equipment where practical.
 - b. Use alternative fuels for construction equipment on-site, where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.
 - c. Avoid the use of on-site generators by connecting to grid electricity or utilizing solar-powered equipment.

Implementation of Mitigation Measure GHG-1 would require compliance with the action items in the City's CAP that would reduce emissions from construction activities. With implementation of Mitigation Measure GHG-1, the project impact related to generation of GHG emissions during construction would be less than significant, and construction activities would be in compliance with the City's CAP.

Operation

The City's CAP provides an inventory of the community baseline GHG emissions in metric tons of carbon dioxide equivalents (MTCO₂e) produced in the year 2007 as well as the projected results for year 2035. In 2007 the City generated 1,349,690 MTCO₂e. According to the 2007 GHG inventory, approximately 1% of the City's GHG emissions were attributable to water and wastewater operations (9,840 MTCO₂e), with less than 0.001% of the overall GHG emissions attributable to water operations (20 MTCO₂e).

As described in the Project Description, emergency wells would be operated on an as needed basis during emergencies, such as during an emergency outage of SCWA supplies. The emergency wells would be permitted to operate for no more than five consecutive days and 15 days a year and the primary power supply for the wells would be provided by PG&E. The emergency wells would normally be turned off, and would not be a substantial source of energy demand or GHG emissions. Therefore, increases in operational GHG emissions from implementation of the Project would be negligible, and potential impacts would be less than significant.

Well facilities would have provisions for a drive-up portable generator connection, so that in the event of a power failure, the City could deliver a portable diesel-powered generator to the site, and the well pumps could continue to run during an emergency. However, the portable generators would only operate during

periods of power outages when facility operations are vital during emergencies. This would be rare and, therefore, annual on-site GHG emissions would not result in significant air quality impacts.

Goal 7 and Measure 7.2 of the City's CAP are applicable to water operations. The objective of Goal 7 is to improve the efficiency of wastewater and water operations in Santa Rosa, and continue to develop a diversified water supply portfolio, including water conservation and recycled water, in order to enhance water supply reliability. The objective of Measure 7.2 is to improve the efficiency of water and wastewater facilities and operations serving the Santa Rosa community. Implementation of the Project would be consistent with Goal 7 and Measure 7.2 of the City's CAP, as the Project would continue to diversify the City's water supply portfolio by managing, protecting, and enhancing the available groundwater resources in a sustainable manner, as well as enhancing the City's water supply reliability. Therefore, implementation of the Project would not conflict with the City's CAP. The CAP also includes goals and measures related to parking and land use management, renewable energy, energy efficiency and conservation, waste reduction, recycling, composting, agriculture and local food, and off-road vehicles and equipment that do not directly apply to the proposed Project. The operational impact to GHG emissions would be less than significant.

	Potentially Significant Impact	Less-Than- Significant With Mitigation Incorporation	Less- Than- Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS				
Would the Project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			✓	
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			✓	
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?		✓		
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?				✓
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				✓
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			✓	
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?		✓		

Discussion:**VIII. a, b) Hazardous Materials and Accident Conditions – Less than Significant****Construction*****Hazardous Materials***

Policy NS-F-2 of the Santa Rosa General Plan 2035 requires that hazardous materials be transported, handled, and stored in accordance with applicable local regulations. Construction activities would include the use of hazardous materials such as fuels, lubricants, paints, and solvents. Routine transport of hazardous materials to and from proposed well sites 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, Caltrans 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.

Naturally Occurring Asbestos

The potential to encounter naturally occurring asbestos during construction was analyzed by reviewing regional geologic mapping. The general geology underlying the City's Urban Growth Boundary has been mapped as gravel, sand and mud deposits, including stream deposits, older alluvium, and rocks of the Glen Ellen and Montezuma Formations; conglomerate, sandstone, and mudstone, including the Tehama Petaluma, Merced, Markley, and Domengine Formations; and volcanic rocks including the Sonoma Volcanics and Putnam Peak Basalt (California Department of Conservation, 1975). Mapping does not show ultramafic rock areas, such as serpentinite and metaphoric rocks, within the City's Urban Growth Boundary (California Department of Conservation 1975 and 2000). Therefore, no human exposure to naturally occurring asbestos is anticipated to occur during construction. No impact would occur.

Operation

As described in the Project Description, new emergency well facilities would store sodium hypochlorite for disinfection. Policy NS-F-2 of the Santa Rosa General Plan 2035 requires that hazardous materials used in businesses and industries be transported, handled, and stored in accordance with applicable local regulations.

Transport of sodium hypochlorite and other types of water treatment chemicals are regulated by Caltrans and the CHP, by setting 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 sodium hypochlorite storage at the well facilities would be required to comply with the current Uniform Fire Code requirements and other applicable federal, State, and local regulations. In addition, the City would be required to incorporate legally mandated design features into the facilities and prepare Hazardous Materials Business Plans for chemical storage at each well facility. 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 transport and use of sodium hypochlorite at new emergency well facilities would be less than significant.

New test wells would not require the transport or use of treatment chemicals or hazardous materials. No impact would occur.

VIII. c) Emit Hazardous Emissions within One-quarter Mile of a School – Less than Significant

Construction

Depending on the location of new test wells and emergency well facilities, hazardous materials could be used or stored within a quarter-mile of a school during construction. Project construction activities are assumed in this Initial Study to include the use of hazardous materials such as fuels, lubricants, degreasers, paints, and solvents. These materials are commonly used during construction, are not acutely hazardous, and would be used in small quantities. Numerous laws and regulations ensure the safe transportation, use, storage, and disposal of hazardous materials (see Impact VIII.a,b above). These types of hazardous materials are commonly used at other construction areas. Although construction activities could result in the inadvertent release of small quantities of hazardous construction chemicals, a spill or release at a construction area is not expected to endanger individuals at nearby schools given the nature of the materials and the small quantities that would be used. Therefore, 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 Project's impact related to the use of hazardous materials during construction at sites that are within 0.25 mile of a school would be less than significant.

Operation

As identified in the Project Description, new emergency well facilities would store sodium hypochlorite for disinfection. Therefore, depending on the location of new emergency well facilities, implementation of the Project could result in the handling of water treatment chemicals within 0.25 mile of a school. Numerous laws and regulations ensure the safe transportation, use, storage, and disposal of hazardous materials (see Impact VIII.a,b above). Incorporation of legally required design features and development of Hazardous Material Business Plans for chemical storage would reduce the potential impact from increased use of chemicals and potential for accidental release, including the potential for emission or use of hazardous materials within 0.25 mile of a school. Therefore, the potential for hazardous materials impacts related to emissions resulting from chemical storage and use to affect schools within 0.25 mile would be less than significant.

VIII. d) Included on a List of Hazardous Materials Sites – Less than Significant with Mitigation

Construction and Operation

The Hazardous Waste and Substances Sites List (EPA 2013) is a planning document used to comply with CEQA requirements for providing information about the location of hazardous materials release sites. The online data resources that provide information on facilities or sites pursuant to Section 65962.5 of the Government Code indicate that there are several leaking underground storage tanks and other contaminated soil and groundwater sites located throughout the City's Urban Growth Boundary that are likely to have localized contamination of soil and underlying groundwater. In the event that a well facility or pipeline connection was located on or adjacent to a contaminated site, contaminated soil or groundwater could be encountered during construction, posing a threat to workers during construction, or

could be mobilized in groundwater. Therefore, potential impacts to construction workers from contaminated soil or groundwater would be potentially significant.

Please refer to Section IX, Hydrology and Water Quality, for a discussion of potential operational impacts related to groundwater quality.

Mitigation Measure HAZ-1: Siting Near a Known Contamination Site

The City of Santa Rosa shall determine whether known hazardous material sites are located within 250 feet of a test well or emergency well site. If the well location is located near such sites, the City shall require the contractor(s) to implement control measures to protect human health and the environment during construction, including, but not limited to, the following:

- Prepare and implement a site-specific health and safety plan in accordance with federal OSHA regulations (29 CFR 1910.120) and Cal-OSHA regulations (8 CCR Title 8, Section 5192) to address worker health and safety issues during construction. The health and safety plan shall identify the potentially present chemicals, health and safety hazards associated with those chemicals, all required measures to protect construction workers and the general public from exposure to harmful levels of any chemicals identified at the site (including engineering controls, monitoring, and security measures to prevent unauthorized entry to the work area), appropriate personal protective equipment, and emergency response procedures. The health and safety plan shall designate qualified individuals responsible for implementing the plan and for directing subsequent procedures in the event that unanticipated contamination is encountered.
- Prepare and implement a hazardous materials management plan that specifies the method for handling and disposal of both chemical products and hazardous materials used in construction and contaminated soil and groundwater, should any be encountered during construction. Contract specifications shall mandate full compliance with all applicable local, State, and federal regulations related to identifying, transporting, and disposing of hazardous materials, including those encountered in excavated soil. The contractor shall submit the Plan to the City and the Sonoma County Environmental Health Division for review and approval. Elements of the plan shall include:
 - o Measures to address hazardous materials and other worker health and safety issues during construction, including the specific level of protection required for construction workers.
 - o Provisions for excavation of soil, stockpiling, dust, and odor control measures.
 - o Measures to prevent off-site migration of contaminated soil and groundwater.
 - o Location and final disposition of all soil and groundwater removed from the site.
 - o All other necessary procedures to ensure that excavated materials are stored, managed, and disposed of in a manner that is protective of human health and in accordance with applicable laws and regulations.

Implementation of Mitigation Measure HAZ-1 would require site-specific preconstruction assessments to identify hazardous materials sites. Mitigation Measure HAZ-1 would also require, as necessary, preparation of a site health and safety plan to protect construction worker health and safety, and a hazardous materials management plan to ensure that appropriate procedures are followed in the event

that hazardous materials, including unanticipated hazardous materials, are encountered during project construction. With implementation of Mitigation Measure HAZ-1, the Project impact related to hazardous materials during construction would be reduced to a less-than-significant level.

VIII. e, f) Safety Hazard for People Residing or Working Within Two Miles of an Airport – No Impact

Construction and Operation

The Charles M. Schulz Sonoma County Airport is located approximately 2.5 miles northwest of the City's Urban Growth Boundary. The Sonoma County Airport Land Use Commission (ALUC) adopted a Comprehensive Airport Land Use Plan Update for Sonoma County in 2001, which includes safety zones around the airport that are designed to reduce potential hazards from land use incompatibility. The Outer Safety Zone boundary for runways at the Sonoma County Airport does not reach the City's Urban Growth Boundary. In addition, no active private airstrips are currently located within the City's Urban Growth Boundary. No impact would occur.

VIII. g) Impair or Interfere with an Adopted Emergency Response/Evacuation Plan – Less than Significant

Construction

The Santa Rosa Emergency Operations Plan (EOP) identifies the City's emergency planning, organization and response policies and procedures (Santa Rosa 2011b). The City's EOP does not designate specific evacuation routes or sites within the City. Therefore, construction activities would not substantially impair implementation of or physically interfere with any adopted emergency response or evacuation plan. The impact would be less than significant.

Operation

As described in the Project Description, the normal operation of the Project would result in the addition of less than one vehicle trip per day to local roadways. Therefore, the Project's contribution to existing traffic conditions would be negligible, and there would be no impact to emergency vehicle access routes or response times.

VIII. h) Exposure to Wildland Fires – Less than Significant with Mitigation

Construction

According to the State of California Department of Forestry and Fire Protection (CALFIRE) mapping, several areas located within the City's Urban Growth Boundary are designated as very high fire hazard severity zones (CALFIRE 2008). This includes areas within operational master zones S-1, S-4, S-6, and Oakmont / S-12. Policy NS-G-1 of the Santa Rosa General Plan 2035 requires proposed developments in high or medium fire hazard areas to investigate a site's vulnerability to fire and to minimize risk accordingly.

In the event that an emergency well, test well, or pipeline is constructed within an area designated as a very high fire hazard severity zone, the potential for impacts from wildland fires during construction could be significant.

Mitigation Measure HAZ-2: Reduce Wildland Fire Hazards during Construction

Where a new emergency well, test well, or pipeline is to be located within a very high fire hazard severity zone as shown on the latest CALFIRE Fire and Resource Assessment Program Map for

Santa Rosa, the City and its contractor(s) shall remove and 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 sites when working in high fire hazard areas to assist in quickly extinguishing any small fires. The contractors shall have on site the phone number for the local fire department(s) when working in fire hazard areas.

Implementation of Mitigation Measure HAZ-2 would require the use of construction techniques that would reduce the likelihood of wildland fires during construction of new emergency well facilities, including associated pipelines, that may be sited within an wildland fire hazard zone. Therefore, with implementation of Mitigation Measure HAZ-2, the impact related to wildland fires would be less than significant.

Operation

In accordance with General Plan Policy NS-G-2, any new development in areas of high wildfire hazards would be required to utilize fire-resistant building materials, as well as on-site fire suppression systems, including smoke and/or detection systems, buffers and fuel breaks, and fire retardant landscaping. Adherence to these measures for any new well facilities in wildland fire hazard areas of the City would reduce long-term operational impacts to less than significant.

	Potentially Significant Impact	Less-Than- Significant With Mitigation Incorporation	Less- Than- Significant Impact	No Impact
IX. HYDROLOGY				
a. Would the Project:				
b. Violate any water quality standards or waste discharge requirements?		✓		
c. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?		✓		
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off- site?		✓		
e. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off- site?			✓	
f. 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?		✓		
g. Otherwise substantially degrade water quality?		✓		
h. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				✓
i. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			✓	
j. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			✓	
k. Inundation by seiche, tsunami, or mudflow?		✓		

Discussion:**IX. a, e, f) Violate Water Quality Standards or Degrade Water Quality – Less than Significant with Mitigation****Construction*****Temporary Soil Disturbance***

Construction activities would temporarily disturb soils, and, if not properly managed, could result in localized areas of soil erosion or siltation which could degrade water quality. As described in the Project Description, the temporary area of disturbance would be 15,000 square feet for test wells and emergency well facilities.

Policy PSF-I-3 of the Santa Rosa General Plan 2035 requires erosion and sedimentation control measures to maintain an operational drainage system, preserve drainage capacity, and protect water quality. Policy PSF-I-6 requires implementation of best management practices to reduce non-point source pollutants. Implementation of these policies is administrated by the City's Municipal Storm Water Permit (Order No. R1-2009-0050). For example, the City's Storm Water Permit requires public construction projects to implement a minimum set of BMPs at construction sites less than one acre in size to protect water quality (RWQCB 2009), which would apply to the Project. These required BMPs include scheduling to sequence construction activities with the installation of erosion and sediment control measures, preserving existing vegetation as an effective form of erosion control, installing silt fencing and sand bag barriers, and stabilizing construction site entrances, as well as water conservation practices and waste management BMPs (RWQCB 2009). Because construction activities associated with implementation of the Project would be required to implement the BMPs in accordance with the City's storm water permit, construction-related impacts on water quality would be less than significant.

Well Development and Pump Testing

Construction of emergency wells and test wells would require various well pumping tests after final well development. As described in the Project Description, it is anticipated that between 0.5 and 2 million gallons of groundwater would be produced from each well during the final well development and pumping tests, which could be discharged to the local storm drain system if the City is unable to discharge to the sanitary sewer system. The peak discharge rate during well development (lasting for a few hours) could be up to 1,500 gpm, although the typical discharge would be closer to about half that rate. It is anticipated that the development and testing would occur over the course of approximately three to five days.

The capacity of the City's storm drain system is variable. As described in the Project Description, if necessary, the groundwater discharge from well development and testing would be pumped to portable storage tanks then released to a local storm drain such that the discharge rate would not exceed the capacity of the individual drainage system. Because emergency well and test well construction related water discharge would be temporary (three to five days per emergency well site and 48 hours per test well site), and because portable storage tanks would be utilized if necessary, impacts from construction of the Project related to exceeding the capacity of the storm drain system would be less than significant.

Well development and pump testing discharges are not one of the authorized non-storm water discharges covered in the City's existing Storm Water Permit. The discharge of sediment-laden groundwater to the

storm drain system during well development and pump testing could degrade water quality and violate water quality standards, and could, therefore, have a significant impact on water quality.

Mitigation Measure HYD-1: Management of Well Development and Pump Testing Discharges

During well development and pump testing, if discharging to a local surface water or storm drain, the City shall first obtain coverage under North Coast Regional Water Quality Control Board Order No. R1-2009-0045, Waste Discharge Requirements for Low Threat Discharges to Surface Waters in the North Coast Region. The City shall submit permit registration documents to the North Coast Regional Water Quality Control Board, including development of a Best Management Practices/Pollution Prevention Plan to characterize the discharge and to identify specific measures to control the discharge, such as sediment controls to ensure that excessive sediment is not discharged, and flow controls to prevent erosion and flooding downstream of the discharge. The City shall ensure that the Contractor oversees implementation of the Best Management Practices/Pollution Prevention Plan during well development and pump testing activities, including visual inspections and ensuring overall compliance.

Mitigation Measure HYD-1 would reduce water quality impacts from dewatering discharges by requiring the City and construction contractor to prepare and implement a Best Management Practices/Pollution Prevent Plan that specifies how groundwater would be managed during well development and pump testing to protect water quality. Implementation of Mitigation Measure HYD-1 would ensure that such discharges to the storm drain system would be compliant with applicable Waste Discharge Requirements. The impact following mitigation would be less than significant.

Operation

Operation of the Project could violate water quality standards or waste discharge requirement standards in three ways: 1) if operation of the emergency wells would change groundwater levels or change groundwater flow patterns such that areas of existing contamination could be mobilized or spread in groundwater, or existing remediation activities could become substantially less effective, 2) if the groundwater pumped as part of the Project would not meet drinking water standards, or 3) pumping discharges to storm drains exceed drainage capacity which leads to polluted runoff to surface waters.

Groundwater Quality relative to Existing Contamination

Placement of an emergency well within 1,000 feet of a known groundwater contamination site could mobilize contaminants and result in potential groundwater quality impacts at the City's emergency wells. The impact could affect the City's ability to deliver water that meets potable water quality standards at an individual emergency well, and the impact could be significant.

Emergency wells would be specifically designed to avoid the capture of shallow groundwater (from the top 50 feet below the ground surface), where most of the existing groundwater contamination is known to exist, and where many existing groundwater users are likely to be extracting groundwater. The emergency wells would be drilled to an approximate depth of 500 to 1,000 feet and would pump groundwater from the intermediate (250 to 500 feet below ground surface) or deep (500 or more feet below ground surface) aquifer. This targeting of deeper water-bearing zones and bypassing of the shallower aquifers would reduce the potential soil and/or groundwater contamination plumes and other potential contaminating activities, and would reduce the potential impact resulting from the movement of the existing contaminant plume. However, the impact could be significant if emergency wells are placed

within 1,000 feet of known groundwater contamination sites and emergency pumping results in mobilization of groundwater contaminants.

Mitigation Measure HYD-1: Locate Emergency Wells to Protect Groundwater Quality

Where the City identifies a potential emergency well site within 1,000 feet of a known area of soil or groundwater contamination, the City shall retain a certified hydrogeologist or professional geologist to evaluate the contamination site(s) to determine the nature and status of the contamination and to evaluate the potential water quality impacts from emergency pumping. The hydrogeologist or geologist shall review records from the North Coast Regional Water Quality Control Board and other databases with relevant contamination information. If a known site is identified as “Closed”, “Not Active”, or “No Remediation Required” then the City can install the emergency well without further evaluation of potential groundwater impacts.

If open cases are identified within 1,000 feet of the proposed well site, the City’s hydrogeologist or geologist shall prepare a Drinking Water Source Assessment according to the Program outlined by the California Department of Public Health. In accordance with the Department’s policies, if the Assessment indicates a vulnerability score of 7 or less, the well may proceed at that location. If the vulnerability score is 8 or more, then the well site must be relocated.

Mitigation Measure HYD-1 would reduce impacts from operation of an emergency well near contaminated groundwater to less-than-significant levels by placement of the well in an area greater than 1,000 feet from known groundwater contamination, or through placement of emergency wells in areas closer to known groundwater contamination only when a Drinking Water Source Assessment shows that placement and operation would not impact groundwater quality or the City’s ability to deliver groundwater that meets potable drinking water standards.

Groundwater Quality relative to Drinking Water Standards

As identified in the Project Description, test wells would be installed to assess the site-specific geologic and hydrogeologic characteristics underlying the proposed emergency well construction site prior to the installation of an emergency well. One of the purposes of this preliminary work would be to determine the water quality expected to be produced by the emergency well. Discrete water quality samples would be collected from multiple aquifer zones encountered in the test well and analyzed for various inorganic and organic water quality constituents. These analytical results would then be compared to California Department of Public Health (CDPH) drinking water standards to ensure that there are no water quality issues of concern. The emergency wells would be constructed to target groundwater extraction from particular aquifer zones where test wells have shown water quality to be acceptable. Once the emergency well is constructed, a full suite of water quality samples would be collected, analyzed, and compared to CDPH drinking water standards. Because these wells are to be permitted by CDPH for operation only during an emergency outage, the emergency wells would only need to comply with CDPH’s primary water quality standards (CDPH waives compliance with its secondary standards for emergency wells because CDPH’s secondary standards are basically aesthetic in nature, i.e., clarity of water, no color, taste, delivered water temperature, etc., and are non-health related, and water service is limited to the 15-day service duration during an emergency condition).

CDPH has strict primary water quality standards for the maximum allowable concentration levels for both total dissolved solids and individual constituents. Therefore, the emergency wells would have to comply with CDPH water quality requirements to be able to be permitted by CDPH for use as potable emergency water supply, and impacts relative to groundwater quality would be less than significant.

Surface Water Quality relative to Storm Drain Discharges

As described in the Project Description, the emergency wells would require regular exercising for approximately one hour per month and for a single, 4-hour period annually. It is anticipated that approximately 170,000 gallons of groundwater could be produced from a well during four hours of regular well exercising, assuming a discharge rate of 700 gpm. Groundwater pumped during exercising would be discharged to either the sanitary sewer or to a local storm drain. Groundwater from potable water sources is a conditionally authorized discharge under the City's Storm Water Permit. Conditions include prohibitions of illicit discharges to the municipal separate storm sewer system, removal of sediment and solids through settling or filtration, controlling discharge rates, and using other best management practices to minimize erosion potential. As identified in the Project Description, in the event the water is discharged to the storm drain system and there is chlorine residual in the water, the water would be dechlorinated using aeration or other appropriate means. Additionally, in the event the water is discharged to the storm drain system, the discharge would be volumetrically controlled through the use of settling tanks, and therefore would not exceed the capacity of the individual drainage system. Therefore, because well maintenance discharges are permitted and infrequent, and because measures would be implemented to control the rate of discharge, operation of emergency well facilities is not anticipated to exceed the capacity of the storm drain system or contribute substantial sources of pollutants. The impact would be less than significant.

Operation and maintenance of test wells would consist of periodic water quality monitoring and sampling. Such monitoring and sampling would not result in the discharge of groundwater to the local storm drain system. Therefore, operation of test well would have no impact on the capacity of the storm drain system and would not result in impacts to water quality.

IX. b) Substantially Deplete Groundwater Supplies or Interfere with Groundwater Recharge – Less than Significant with Mitigation

For the purpose of analysis, the aquifers underlying the City's Urban Growth Boundary are defined as follows: the shallow aquifer is defined as occurring to a depth of 250 feet below ground surface; the intermediate aquifer extends from 250 to 500 feet below ground surface; and the deep aquifer occurs lower than 500 feet below ground surface.

Construction

As described in the Project Description, the installation of test wells and emergency wells would include pumping approximately 2 million gallons of groundwater over a course of approximately five to ten days during final well development and pump testing. Final well development and pump testing would not deplete groundwater supplies or interfere with groundwater recharge because the groundwater quantities would be low and the duration would be short-term. The impact would be less than significant.

Operation

As discussed in the Project Description and in the Groundwater Master Plan, approximately five emergency wells would be installed west of the Rodgers Creek fault zone in the Central City Operational Master Zone. The number of wells is based on the need to provide approximately 2,900 gallons per minute (gpm) of emergency supply during an assumed emergency supply outage condition at buildout of the City's approved General Plan.

Approximately six emergency wells would be installed east of the Rodgers Creek fault zone to meet the identified emergency supply needs at buildout of the City's approved General Plan. Approximately three

emergency wells would be constructed in the lower Rincon Valley service area, and one well each would be constructed in the Montecito Valley, Bennett Valley and Oakmont service areas.

The number of wells is based on the need to provide emergency supply in these water service zones assuming that each emergency well would be capable of producing about 700 gpm. The number of wells may increase or decrease if the production rate in an emergency well is less than or greater than 700 gpm.

Because the Project's focus would be to locate, construct and deliver emergency groundwater supplies to key pump stations located throughout the City's water distribution system, emergency wells would not be installed in one centralized location. Individual emergency wells would be strategically located throughout the City. The geology and groundwater levels vary between areas on the east side and the west side of the Rodgers Creek fault zone; therefore, the discussions of the potential groundwater supply and groundwater recharge impacts from operation of emergency wells are presented separately below for areas west and east of the fault zone.

Potential Impacts to Groundwater Supply

Potential Regional Groundwater Impacts of Emergency Wells Located West of the Rodgers Creek Fault Zone

As discussed in the Project Description and in the Groundwater Master Plan, the City needs approximately 2,900 gpm for up to 15 continuous days (192 acre-feet) of pumped groundwater supply to meet the emergency supply needs in the portions of the City located west of the Rodgers Creek fault zone. The City currently has no groundwater wells in this portion of the groundwater basin.

Based on preliminary results as reported in the Draft USGS Study of the Santa Rosa Plain (Chapter E: Model Results 2013), the USGS has developed a long-term annual groundwater budget (from 1975 to 2010) for both the entire Santa Rosa Plain Study Area, and specifically for the Santa Rosa Storage Unit (which includes the City's Urban Growth Boundary). This preliminary USGS data indicate that approximately 80,000 acre-feet per year of annual recharge is occurring in the Santa Rosa Plain Study area, and approximately 20,000 acre-feet per year of recharge occurred in the Santa Rosa Storage Unit. Based on these annual estimates of groundwater recharge, an increase in pumpage of 192 acre-feet over a 15 day period would equate to approximately 1 percent of the annual recharge amount that occurs in the Santa Rosa Storage Unit. Therefore, the groundwater pumping amount for the Project would not adversely affect groundwater supplies in the area. Emergency well pumping would have no effect on groundwater recharge. In addition, it is important to note that the City has never needed to use its emergency pumping system in the past and such pumping is expected to be very infrequent in the future (personal communication, J. Burke, 2013). Therefore, the impact on groundwater supplies in areas west of the Rodgers Creek fault zone would be less than significant.

Potential Regional Groundwater Impacts of Emergency Wells Located East of the Rodgers Creek Fault Zone

Six emergency wells would be installed east of the Rodgers Creek fault zone to provide approximately 3,000 gpm of emergency supply at buildout. Approximately three emergency wells would be constructed in the lower Rincon Valley service area, and one well each would be constructed in the Montecito Valley, Bennett Valley and Oakmont service areas.

Based on the City's future emergency supply need of approximately 3,000 gpm for up to 15 days, this equates to approximately 200 acre-feet of required emergency groundwater supply. The current quantity

of groundwater produced from the City's existing Farmers Lane Wells 1 and 2 has averaged approximately 1,100 acre-feet per year over the last six years (since 2007 when the City began to use Farmers Lane Wells 1 and 2 as production wells). Therefore, the proposed emergency well operation east of the Rodgers Creek fault zone would increase the City's use of groundwater in areas east of the Rodgers Creek fault zone by an additional 200 acre-feet per year, or from about 1,100 acre-feet per year to a total of approximately 1,300 acre-feet per year.

The annual recharge to the groundwater basin is approximately 2,500 acre-feet per year (West Yost 2004). The annual groundwater pumpage including the Farmer's Lane wells and proposed emergency wells would be below the annual recharge for the subbasin. In addition, emergency pumping is expected to occur very infrequently. Therefore, the impact on regional groundwater levels would be less than significant.

Potential Impacts to Existing Wells

Potential Impacts to Existing Wells Located West of the Rodgers Creek Fault Zone

A radius-of-influence analysis was conducted to estimate potential groundwater level impacts to existing, neighboring wells which are screened in the same lower aquifer that would be targeted by the proposed emergency wells.

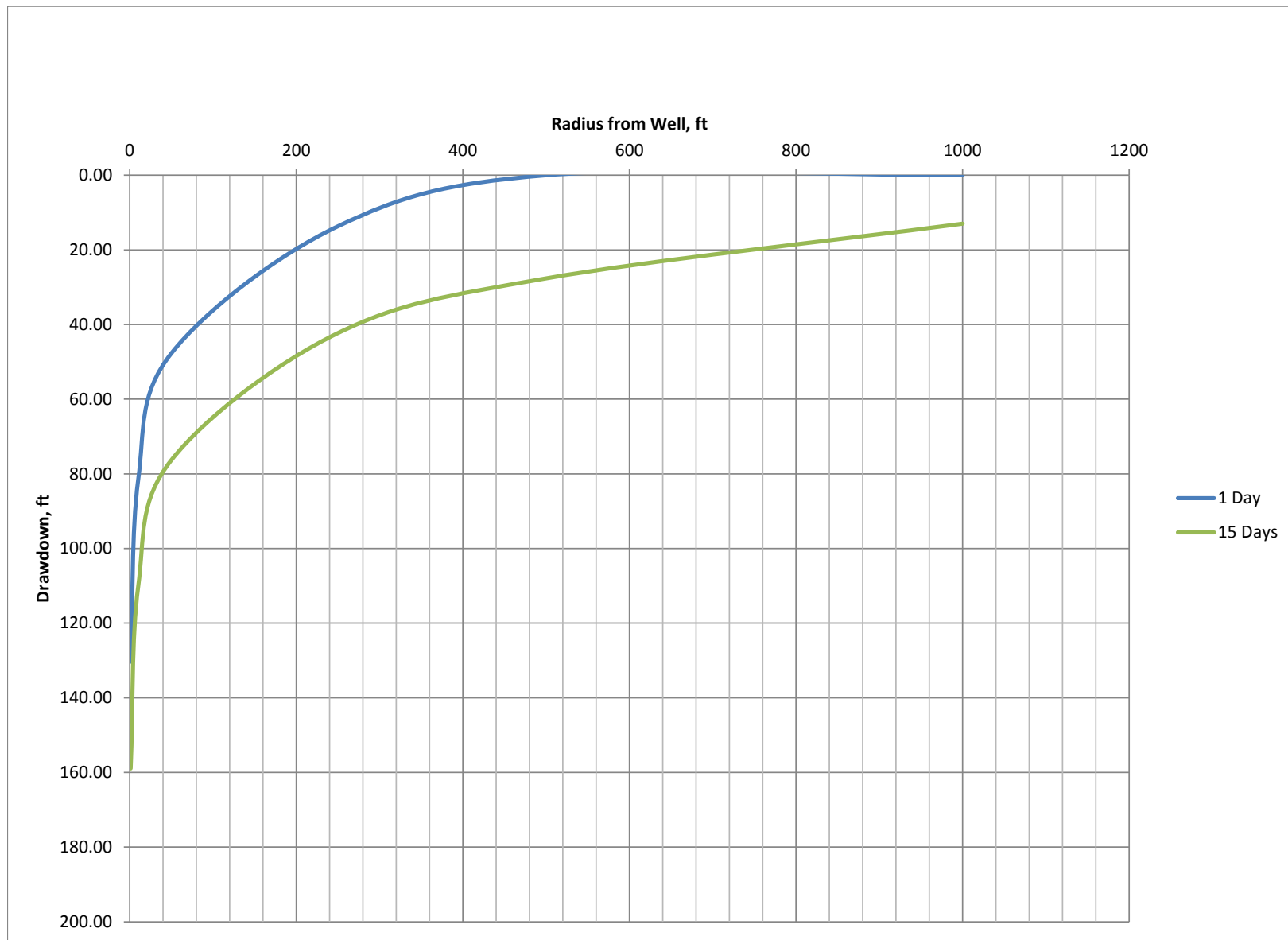
An emergency well pumping at 700 gpm would have the potential to reduce groundwater levels in the deeper aquifer by approximately 25 feet at a radial distance of approximately 500 feet from the emergency well, as illustrated on Figure 5. As also illustrated on Figure 5, if the emergency outage only lasted one day, and therefore the City's emergency well only operated one day, there would be no groundwater level impact at existing wells located beyond a radius of 500 feet from a City emergency well. (West Yost 2013)

Due to the infrequent use of the proposed emergency wells, the relatively small groundwater level change, and because groundwater levels would rebound very quickly to previous levels once the short operation of the emergency wells stopped, this temporary impact is considered less than significant for existing wells located beyond 500 feet from an emergency well.

However, if an existing well were located within about 250 feet of an emergency well, pumping at 700 gpm would have the potential to reduce groundwater levels in the deeper aquifer by approximately 40 feet. If an emergency well were pumping at a higher rate than 700 gpm, potential groundwater level impacts in the deeper aquifer could be greater. Such changes in groundwater levels could adversely impact existing wells screened in that deeper aquifer, and the impact could be significant if existing wells become unusable during pumping of an emergency well.

Mitigation Measure HYD-2: Locate Emergency Wells to Reduce Well Interference Impacts at Existing Potable Wells

The City shall site emergency wells to avoid or reduce potential impacts to existing potable water wells where the existing domestic well screen extends into the same intermediate or deep aquifer from which the emergency well would draw groundwater. On the west side of the Rodgers Creek fault zone, the City shall locate emergency wells at least 250 feet away from such existing wells, if feasible. On the east side of the Rodgers Creek fault zone, the City shall locate emergency wells at least 75 feet away from such existing wells, if feasible. If a City emergency well must be located within 250 feet of a such a well on the west side of the Rodgers Creek fault zone, or within 75 feet of such a well on the east side of the fault zone, and the existing well is impacted during emergency pumping, the City shall provide a temporary water supply to the existing well owner equivalent to the



City of Santa Rosa
Groundwater Master Plan

Estimated Drawdown Curve, Hypothetical City
Emergency Well Located West of Rodgers Creek
Fault assuming a 700 Gallons Per Minute Pumping Rate

Figure 5

Job Number | 8410080
Revision | 1
Date | 06 Jun 2013

water supply made available to City residents during the emergency conditions. Impacts to such an existing well are considered to occur if the existing well production capacity declines to below levels needed to supply potable water for health and safety purposes during operation of the City's emergency well. The City shall continue to provide a temporary water supply until the pre-emergency pumping capacity of the existing potable well resumes following shutdown of the City's emergency well.

Mitigation Measure HYD-2 would reduce impacts to existing wells from a decrease in groundwater levels resulting from emergency well pumping by locating emergency wells outside the sphere of influence of the emergency wells and by providing well owners with a temporary water source if a well becomes impacted. Implementation of Mitigation Measure HYD-2 would ensure that existing well owners would have a temporary water source of basic health and safety volumes of water if a well is impacted. The impact following mitigation would be less than significant. The mitigation measure would not interfere with implementation of the Project objectives, as the Project would provide sufficient emergency supply from throughout the system to accommodate the very few existing deep wells that may be affected.

Potential Emergency Wells Located East of the Rodgers Creek Fault

An emergency well pumping at 700 gpm would have the potential to reduce groundwater levels in the lower water bearing zone by about 11 feet at a location approximately 500 feet away from the emergency well. Existing private wells that draw water from the deeper aquifer could be affected during emergency well operation. However, once the emergency well is turned off, groundwater levels will quickly return to pre-existing levels and the existing wells would be unaffected. Figure 6 presents a cross-section of the anticipated emergency well drawdown cone for emergency wells potentially located east of the Rodgers Creek Fault. As also illustrated on Figure 6, if an emergency well only operated one day, there would be a potential groundwater level decrease of approximately 7 feet at a radius of 500 feet from the well. (West Yost 2103)

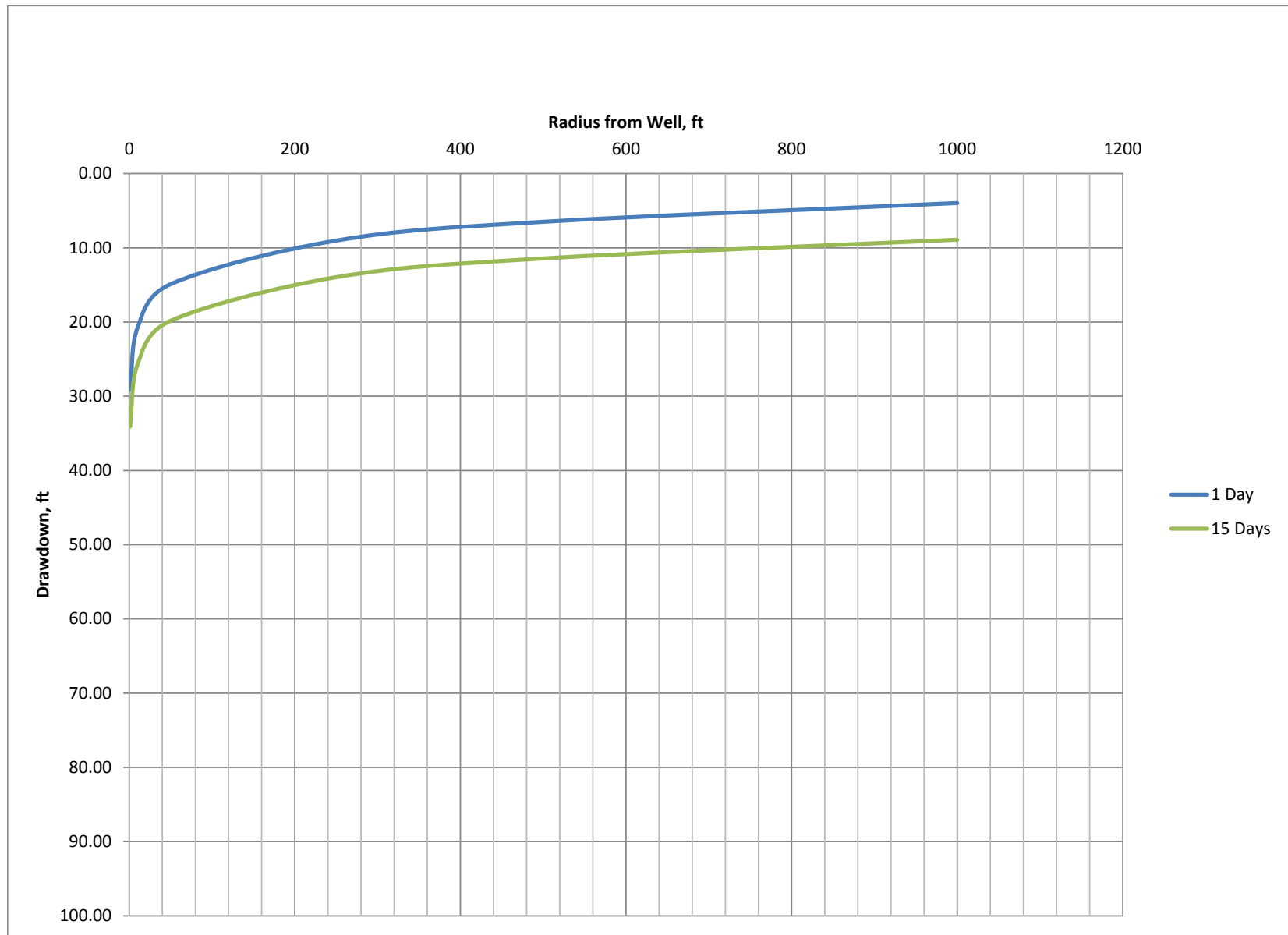
Due to the expected infrequent use of the emergency well system, the relatively small groundwater level impact, and because groundwater levels would rebound quickly to previous levels once the operation of the emergency wells were turned off, the temporary impact to existing wells located beyond 75 feet from an emergency well would be less than significant.

However, if an existing well is located within about 75 feet of a City emergency well or pumping rates were higher, potential groundwater level impacts could increase to approximately 40 feet. Such changes in groundwater levels could adversely impact existing wells in the area if they were screened in the deeper aquifer, and the impact could be significant if existing wells become unusable during pumping of a City emergency well. Mitigation Measure HYD-2 would be needed to reduce impacts to less-than-significant levels.

Mitigation Measure HYD-2: Locate Emergency Wells to Reduce Well Interference Impacts at Existing Potable Wells

(described above)

Mitigation Measure HYD-2 would reduce impacts to existing wells from a decrease in groundwater levels resulting from emergency well pumping by locating emergency wells outside the sphere of influence of the emergency wells and by providing well owners with a temporary water source if a well is impacted. Implementation of Mitigation Measure HYD-2 would ensure that private well owners would have a temporary water source to provide basic health and safety quantities of water if a well is impacted. The impact following mitigation would be less than significant. The mitigation measure would be feasible upon implementation of the Project, as the Project



City of Santa Rosa
Groundwater Master Plan

Estimated Drawdown Curve, Hypothetical City
Emergency Well Located East of Rodgers Creek
Fault assuming a 700 Gallons Per Minute Pumping Rate

Figure 6

Job Number | 8410080
Revision | 1
Date | 06 Jun 2013

would provide sufficient emergency supply from throughout the system to accommodate the very few existing deep wells that may be affected.

Potential Impact on Surface Waters

Groundwater pumping has the potential to reduce the source of flow in creeks or other surface waters. The potential impact on surface waters due to the up to 15 days of operation of the emergency wells was determined based on the likely construction details of the emergency wells, and anticipated hydrogeologic conditions to be encountered. Screening of emergency wells would range between 250 to 1,000 feet deep. The proposed well screening depth would help to avoid impacts on surface waterbodies by drawing groundwater from deeper aquifers which are not hydraulically connected and do not contribute water to surface waterbodies. Although the precise location of test wells and emergency wells has not been determined, the City's Zoning Code Section 20-30.040 prevents placement of wells within 50 feet of the bank of a waterbody.

Surface water sources are generally created and sustained by rainfall and runoff, and in some cases, are also supported by the presence of springs and/or shallow groundwater. Screening of the emergency wells could occur between approximately 250 to 1,000 feet below ground surface, drawing water from the intermediate or deeper aquifers, which are separated from the shallow groundwater by semi-confining or confining clay layers or other less permeable materials in the geology in most areas. However, if an emergency well were placed and operated in an area within 250 feet of a water body in areas of the City on the west side of the Rodgers Creek fault, or within 75 feet of a waterbody in areas of the City on the east side of the Rodgers Creek Fault, and within a location without a confining clay layer to separate the shallow groundwater from surface waterbodies, then there is a potential for emergency well operation to adversely impact surface water levels. The impact could be significant if flows or surface water levels in waterbodies decrease as a result of emergency pumping.

Mitigation Measure HYD-3: Locate Emergency Wells to Reduce Impacts to Surface Water Bodies

The City shall site emergency wells to avoid potential impacts to nearby surface water bodies by locating emergency wells 250 feet away from a water body in areas of the City on the west side of the Rodgers Creek fault zone, or 75 feet on the east side of the fault zone, if feasible. If an emergency well must be located closer than 250 feet of a water body in areas of the City on the west side of the Rodgers Creek Fault, or within 75 feet of a water body in areas of the City on the east side of the Rodgers Creek Fault, the City shall retain a certified hydrogeologist or professional geologist to evaluate the potential impacts from emergency pumping at 700 gpm (or the planned pumping capacity for the individual well) for the maximum operating scenario of 15 days continuous pumping per year. If the hydrogeologist or geologist determines that pumping from an emergency well at the proposed location could cause a reduction of flow or a decline in water levels to surface water bodies, then the City shall change the proposed site of the emergency well.

Mitigation Measure HYD-3 would reduce impacts from operation of an emergency well near a surface water body to less-than-significant levels by requiring placement of the well in an area greater than 250 feet or 75 feet from water bodies depending on the location in relation to the Rodgers Creek fault, or by illustrating that operation of a closer well would not impact surface waters flow or water levels. The impact following mitigation would be less than significant.

Potential Impact from Subsidence

The definition of land subsidence is as follows: the gradual settling or sudden sinking of the Earth's surface owing to subsurface movement of earth materials. In California, the principal causes of subsidence are groundwater mining and the associated compaction of susceptible aquifer systems, and the drainage or dewatering of organic soils. (USGS, 1999, Circular 1182, Land Subsidence in the United States, <http://pubs.usgs.gov/circ/circ1182/>)

As stated in the definition of subsidence, the principal cause/factor is the extraction of groundwater beyond the natural ability of the aquifer system to recharge itself, or mining groundwater over an extended period of time (typically decades). As identified in the Project Description, the proposed emergency pumpage quantities would be small and intermittent. Emergency pumping would be within the estimated quantities of annual recharge (West Yost 2013). Given the low pumping quantities from the emergency wells and the sustained yield of the groundwater basin, subsidence would not occur, and there would be no impact.

IX. c) Substantially Alter Drainage Patterns Resulting in Erosion or Siltation – Less than Significant with Mitigation

Construction

Policy OSC-D-9 of the Santa Rosa General Plan 2035 requires the City to ensure that construction adjacent to creek channels is sensitive to the natural environment, that natural topography and vegetation is preserved along the creek, and that construction activities do not disrupt or pollute waterways.

The locations of the test wells and emergency wells have not yet been determined, however, they would not be located closer than 50 feet from the top of bank of a stream, creek, pond, or other waterbody as required in the City's Zoning Code. Therefore, construction of well facility components, including well drilling and well building construction, would not involve any alterations to stream or river courses.

Construction of pipelines connecting well facilities to the water system could potentially require the placement of a pipeline across a creek. As described in the Project Description, installation of pipelines across creek channels could utilize trenchless methods (either horizontal directional drilling or jack and bore) or open trenching methods. Installation of pipeline undercrossings using trenchless methods would not alter the course of waterways; therefore, the impact from creek crossings utilizing trenchless construction would be less than significant. Pipeline creek crossings installed by open trenching across a creek channel would temporarily impact the banks and channels of the creek and could result in erosion or siltation if not properly controlled and restored following construction. The impact from construction across creeks using open trenching methods is considered significant.

Mitigation Measure BIO-3: Protect Wetlands and Waters

(See Section III, Biological Resources, for a description of this mitigation measure)

Implementation of Mitigation Measure BIO-3 would reduce impacts to a less-than-significant-level through implementation of a compensatory mitigation program for impacts to wetlands that cannot be avoided.

Operation

Following construction, disturbed areas at emergency or test well sites would be restored to pre-existing conditions and seeded and mulched as necessary. Operation and maintenance of test well facilities would consist of periodic sampling events, and operation and maintenance of emergency wells would consist of periodic well exercising as well as pumping during emergencies. These operational activities would not alter drainage patterns and therefore would not result in erosion or siltation. Therefore, operation of the Project would have a less-than-significant impact related to erosion or siltation.

IX. d) Substantially Alter Drainage Patterns Resulting in Flooding – Less than Significant**Construction and Operation**

Policies PSF-I-8 and NS-D-3 of the Santa Rosa General Plan 2035 require implementation of the City's Standard Urban Storm Water Mitigation Plan (SUSMP) to manage stormwater drainage and capacity and to minimize hazards associated with storm flooding. The City of Santa Rosa's Storm Water Low Impact Development Technical Design Manual (LID Manual), adopted in 2011, provides technical guidance for project designs that include the implementation of permanent storm water BMPs (Santa Rosa 2011a). Conformance to LID Manual requirements are confirmed through the review and approval of preliminary and final SUSMP submittals.

The LID Manual establishes guidelines to reduce the impact of new development or redevelopment on storm water quality and quantity. One of the goals of the LID Manual is to reduce the potential for increased flooding due to runoff from newly created impervious surfaces. Applicability thresholds for projects subject to LID requirements are specified in the City Storm Water Permit and summarized in the LID Manual. Projects undertaken solely to install or reinstall public utilities which do not include any additional street or road development or redevelopment activities are considered exempt (the exemption applies to public utilities, such as sewer or water, only). The proposed test wells or emergency well facilities will function as a part of the City's water utility, providing emergency water supply. Because the test wells and emergency well facilities would not include street or road development or redevelopment activities, other than resurfacing of pipeline trenches, they are considered exempt from LID requirements. The impact would be less than significant.

IX. g) Place Housing within a 100-Year Flood Zone – No Impact**Construction and Operation**

The Project does not include the construction of new housing. Therefore, no impact would occur related to the placement of housing within a 100-year flood hazard zone.

IX. h) Place Structures within a 100-Year Flood Zone Which Would Impede Flood Flows – Less than Significant**Construction and Operation**

Policy OSC-D-12 of the Santa Rosa General Plan 2035 states that new development should maintain an adequate setback from channelized waterways to avoid the 100-year flood elevation. To reduce flood risk within the community, the City complies with National Flood Insurance Program regulations which apply to all areas of special flood hazard within the City. The Federal Emergency Management Agency (FEMA) prepares Flood Insurance Rate Maps (FIRMs) as part of their floodplain mapping program. In 1981, FEMA prepared the initial FIRMs for Santa Rosa. However, the mapping effort was limited to the confluence of Spring Creek with Matanzas Creek; the remainder of the City was not included (Santa Rosa 2009a). The FIRM for Santa Rosa delineates a 100-year flood zone in the area of Montgomery Village east of Farmers Lane, and a 100-year flood zone associated with Matanzas Creek located to the south of Spring Creek (generally within the creek channels) (Santa Rosa 2009b). Delineated 100-year flood zone areas are primarily located in operational master zone S-9, although several delineated 100-year flood zone areas are also located in the Central City and Oakmont operational master zones. In 2012, additional flood hazard maps became effective in southwestern Santa Rosa within the Naval, Roseland and Colgan Creek watersheds. These maps indicate the level of risk for flooding within these

watersheds. Additional flood studies are currently underway along Naval Creek and within the Santa Rosa Creek and Todd Creek watersheds.

As required in the City's Zoning Code, wells would not be located within 50 feet of a creek or lake (City Zoning Code Section 20-30.040). Therefore, construction of emergency well facility components would not result in construction of facilities within a floodway. However, it is possible that some facilities could be constructed in FEMA designated 100-year special flood hazard areas. Emergency well facilities would include a well building up to 250 square feet. If required, the well building would be elevated above the 100-year flood elevation as required in Sonoma County. In addition, any facilities built within the City would be required to comply with applicable City code requirements, including the City's Flood Damage Protection requirements (Chapter 18-52 of the City's Municipal Code). The small size of the permanent facility would have a negligible effect on impeding or redirecting flood flows and would therefore not adversely affect surrounding areas. Pipelines located within a 100-year flood zone would be below ground and would, therefore, not impede or redirect flood flows. The impact associated with siting of emergency wells within a 100-year flood zone would be less than significant.

Test wells would not include buildings and would have a permanent footprint of approximately 30 square feet, consisting of a wellhead, concrete pad, and protective bollards (see Project Description, Image 1). If located within a 100-year flood zone, a test well would have a negligible effect on impedance or redirection of flood flows. The impact would be less than significant.

IX. i) Flooding from a Levee or Dam – Less than Significant

Construction and Operation

Several reservoirs are located within the City of Santa Rosa, and several areas are susceptible to inundation in case of dam or levee failure (Santa Rosa 2009a, Figure 12-4). However, the dams on these reservoirs are under the jurisdiction of the Division of Safety of Dams (DSOD), which imposes strict standards for the design, maintenance, and monitoring of dams under its jurisdiction. DSOD requirements for siting, engineering, construction, and monitoring of dams are continually improved as knowledge increases as to how and why dams fail. Additionally, several of the policies included in the General Plan 2035 are directed at minimizing the risk associated with dams. Policies NSC-C-7 and NS-E-1 require inspection of water storage facilities, including local dams, to ensure that safety measures are in place. Therefore, the impact from flooding as a result of levee or dam failure would be less than significant.

IX. j) Inundation by Seiche, Tsunami, or Mudflow – Less than Significant with Mitigation

Construction and Operation

Implementation of the Project would have no effect on the frequency or probability of seiches (i.e., earthquake-induced oscillating waves in an enclosed water body), because the Project would not create new enclosed water bodies or affect the frequency of earthquakes. Further, the Project does not include the construction of habitable structures near any isolated bodies of water subject to inundation by seiche.

Project facilities would not be at risk from a tsunami because the City is not located within a tsunami hazard zone (Cal EMA 2009).

As discussed in Section VI, Geology and Soils, the Project area consists of mostly flat land, which is defined as areas of gentle slope at low elevation that have little or no potential for the formation of slumps, transitional slides, or earth flows except along stream banks or terrace margins (USGS 1998). However, the eastern portion of the City, including portions of the S-1, S-4, S-6, S-9, S-12, and Oakmont

operational master zones include areas where slopes exceed 10 percent. In the event that a new emergency well facility is sited in an area with slopes exceeding 10 percent, the potential for the well facility to be damaged by potential mudflows would be significant.

Mitigation Measure GEO-2: Reduce Risk of Damage from Ground Shaking and Unstable Soils

See discussion in VI, Geology and Soils a.iii, a.iv, c, and d for a description of this mitigation measure.

Implementation of Mitigation Measure GEO-2 would require design-level geotechnical studies for sites located on potentially unstable soils prior to construction that would evaluate the need for soil stabilization measures. In addition, geotechnical investigations would be required for sites located in areas containing unstable soils that would assure site stability and structural integrity. With implementation of Mitigation Measure GEO-2, the potential impact related to mudflows would be reduced to a less-than-significant level.

	Potentially Significant Impact	Less-Than- Significant With Mitigation Incorporation	Less- Than- Significant Impact	No Impact
X. LAND USE AND PLANNING				
Would the Project:				
a. Physically divide an established community?			✓	
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			✓	
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				✓

Discussion:**X. a) Physically Divide an Established Community – Less than Significant**

Implementation of the Project would result in new emergency well facilities and test wells located in various areas of the City. As described in the Project Description, new emergency well facilities would consist of a well building (approximately 250 square feet), and potentially a new access driveway and parking area. New test wells would have a permanent impact of approximately 30 square feet, and emergency wells would have a permanent impact of approximately 2,500 square feet. By nature and design, the proposed test and emergency well sites would not be large enough to physically divide an established community. Therefore, the potential for the Project to physically divide an established community would be less than significant.

X. b) Conflict with Applicable Land Use Plans, Policies or Regulations – Less than Significant

Applicable land use plans include the Santa Rosa General Plan 2035 (including the Downtown Station Area Specific Plan, Northern Downtown Pedestrian Linkages Study, Sebastopol Road Urban Vision and Corridor Plan, Southwest Area Plan, Southeast Area Plan, and North Santa Rosa Station Area Specific Plan) and the City's Zoning Code. Specific policies adopted for the purpose of avoiding environmental effects are evaluated in this document under the corresponding issue areas; for example, policies to protect biological resources are evaluated in Section IV, and policies related to transportation are evaluated in Section XVI.

Development of test well and emergency well facilities are best categorized as utility infrastructure projects. Such facilities are considered allowable uses under all zoning districts, either as a permitted use, or as a permitted conditional use. Development of these projects would not preclude or conflict with Santa Rosa General Plan 2035 (and specific plan) land use goals and policies such as fostering compact development patterns, promoting cooperative community planning, maintaining downtown Santa Rosa as a vital mixed-use center, creating pedestrian friendly streetscapes, fostering compact and vibrant retail at the core of downtown, and preserving open space. Therefore, implementation of the Project would have less than significant impacts related to potential conflicts with land use plans and policies.

To the extent the land use plans and policies contain objectives and policies that avoid or mitigate environmental effects, the consistency of the Project with such plans and policies is examined in each relevant analysis section of this Initial Study.

X. c) Conflict with any Applicable Habitat Conservation Plan or Natural Community Conservation Plan – No Impact

There are no adopted habitat conservation plans or natural community conservation plans within the City's Urban Growth Boundary. Therefore, implementation of the Project would have no impact related to applicable habitat conservation plans or natural community conservation plans. Please refer to the Biological Resources section of this Initial Study regarding the Santa Rosa Plain Conservation Strategy.

	Potentially Significant Impact	Less-Than- Significant With Mitigation Incorporation	Less- Than- Significant Impact	No Impact
XI. MINERAL RESOURCES				
Would the Project:				
11. 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?				✓
12. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				✓

Discussion:**XI. a) Loss of Availability of a Known Mineral Resource – No Impact**

Policy OSC-C-4 of the Santa Rosa General Plan 2035 directs the City to work with the County of Sonoma to encourage the conservation of mineral resources and the protection of access to those resources.

According to regional mapping of mineral resources in Sonoma County, the mineral resource zones MRZ-3a and 3b (areas of known and inferred mineral occurrences of undetermined mineral resource significance) occur within the City's Urban Growth Boundary (CGS 2005). However, the City of Santa Rosa General Plan 2035 and regional mapping does not identify any State-designated (MRZ-2) or locally important mineral resource locations in the vicinity of the Project area.

Although MRZ-3a and 3b zones could result in the reclassification of specific localities that could potentially designate the area as containing known and significant mineral resources (CGS 2005), the current classification indicates that the implementation of the Project would not result in the excavation of mineral resources nor would it result in the loss of availability of known mineral resources that would be of value to the region and the residents of the state. No impact would occur.

XI. b) Loss of Availability of a Known Mineral Resource Delineated in General Plan – No Impact

The City of Santa Rosa General Plan does not identify any locally important mineral resource locations within the City's Urban Growth Boundary (Santa Rosa 2009a). Therefore, the Project would not result in the loss of availability of a locally-important mineral resource recovery site. No impact would occur.

	Potentially Significant Impact	Less-Than- Significant With Mitigation Incorporation	Less- Than- Significant Impact	No Impact
XII. NOISE				
Would the Project result in:				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		✓		
b. Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?		✓		
c. A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?				✓
d. A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?			✓	
e. For a project located within an airport land use plan 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?				✓
f. For a project within the vicinity of a private airstrip, would the Project expose people residing or working in the project area to excessive noise levels?				✓

Discussion:

XII. a, c) Exposure to Noise Levels in Excess of Standards or a Substantial Increase in Ambient Noise Levels – Less than Significant with Mitigation

Construction

Daytime Construction

Noise levels in areas surrounding proposed test wells and emergency wells would increase during construction. Construction noise would be temporary and would primarily be associated with the operation of construction vehicles and well drilling equipment. Construction noise levels would vary on a day-to-day basis and be sporadic rather than continuous in nature, because different types of construction equipment would be used throughout the construction process.

The exact locations of test wells and emergency wells are not currently known, however, daytime construction activities are expected to range from 75 to 84 dBA L_{eq} at a distance of 50 feet from the center of a well facility site (Illingworth & Rodkin 2013b). Although the City of Santa Rosa General Plan 2035 and Municipal Code do not have regulations regarding construction noise, residential, overnight health care, and school land uses can be sensitive to excessive noise levels. Based on the estimated daytime construction noise levels, sensitive land uses within 80 feet of well facility construction activities could periodically be exposed to substantial noise levels, and the impact is considered significant.

For the purpose of analysis, pipeline construction is estimated to proceed at a rate of approximately 50 feet per day. Therefore, sensitive receptors along a pipeline route would not be subject to pipeline construction noise for more than one to two days. The impact associated with pipeline installation would be less than significant.

Mitigation Measure NOI-1: Reduce Daytime Construction-Related Noise

Construction of a test well or emergency well on a school shall be scheduled to occur when the school is not in session. Daytime construction activities associated with well facility construction occurring within 80 feet of a residential, school, or overnight health care land use shall implement construction noise control measures. Noise control measures may include, but would not be limited to the following:

- All equipment driven by internal combustion engines shall be equipped with mufflers which are in good condition and appropriate for the equipment.
- The construction contractor shall utilize “quiet” models of air compressors and other stationary noise sources where technology exists.
- Unnecessary idling of internal combustion engines shall be prohibited.
- At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors.
- All stationary construction equipment shall be placed so that the emitted noise is directed away from sensitive receptors nearest the project site.
- Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.
- The construction contractor shall designate a “noise disturbance coordinator” who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and institute reasonable measures as warranted to correct the problem (e.g., to ensure that the measures above are implemented). A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.

Implementation of Mitigation Measure NOI-1 would reduce daytime construction noise impacts at nearby residential land uses from temporary construction noise to a less-than-significant level by requiring mufflers, quiet equipment, and proper location and orientation of equipment to reduce construction noise levels.

Nighttime Construction

As identified in the Project Description, well installation could require nighttime activity during drilling and other drilling and well installation-related activities (for up to approximately 20 consecutive days and nights) and also during pump testing (for one continuous 72-hour period). Well drilling activity would be enclosed within an engineered sound wall enclosure. For the purpose of analysis, such an enclosure is estimated to provide a minimum of 10 dBA L_{eq} noise reduction. Therefore, nighttime well drilling is calculated to result in a noise level of 79 dBA L_{eq} at a distance of 50 feet (Illingworth & Rodkin 2013b). Based on the estimated nighttime construction noise levels, residential land uses within 450 feet of nighttime well drilling activities could be exposed to high construction noise levels, and the impact is considered significant.

Pipeline construction would not occur during nighttime hours, and therefore no nighttime noise impacts would occur from pipeline installation.

Mitigation Measure NOI-2: Reduce Nighttime Construction-Related Noise

Nighttime construction activities associated with emergency well or test well construction occurring within 450 feet of a residential or overnight health care land use shall implement construction noise control measures to further reduce noise.

The City shall provide a minimum 24-hour advance notice to residents within 450 feet of a well site prior to nighttime work. The advance notice shall provide information regarding anticipated schedule, hours of operation and a designated project contact person.

The designated project contact shall be responsible for responding to noise complaints during the construction phases. The name and phone number of the liaison shall be posted at construction areas and on advanced notifications. This person shall take steps to resolve complaints, including periodic noise monitoring, if necessary. Results of noise monitoring shall be presented at regular Project meetings with the contractor. A reporting program shall be required that documents complaints received, actions taken to resolve problems, and effectiveness of these actions.

Additional measures to reduce nighttime construction noise shall also be implemented, which may include, but would not be limited to the following:

- To the extent consistent with applicable regulations and safety considerations, operation of vehicles requiring use of back-up beepers shall be avoided near sensitive receptors during nighttime hours and/or the work sites shall be arranged in a way that avoids the need for any reverse motions of large trucks or the sounding of any reverse motion alarms during nighttime work. If these measures are not feasible, trucks operating during the nighttime hours with reverse motion alarms shall be outfitted with SAE J994 Class D alarms (ambient-adjusting, or “smart alarms” that automatically adjust the alarm to 5 dBA above the ambient near the operating equipment).
- Maintain orderly conduct among workers, including worker conversation noise during nighttime hours.
- Schedule work and deliveries to minimize noise-generating activities during nighttime hours at work sites (e.g., no deliveries or non-essential work).
- Maintain the equipment properly to minimize extraneous noise due to squeaking or rubbing machinery parts, damaged mufflers, or misfiring engines.
- Stationary noise sources shall be located as far from sensitive noise receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used. Enclosure openings or venting shall face away from sensitive noise receptors.
- Locate equipment at the work area to maximize the distance to noise-sensitive receptors and to take advantage of any shielding that may be provided by other on-site equipment.
- Utilize sound blankets to reduce noise from the drilling rig.

Implementation of Mitigation Measure NOI-2 would reduce nighttime construction noise impacts at residential land uses to a less-than-significant level by requiring advance notice to residents within 450 feet, measures to reduce nighttime construction noise, and implementation of a reporting program and contact person to document and resolve complaints.

Operation

The Santa Rosa General Plan 2035 identifies several policies to maintain acceptable community noise levels, such as Policy NS-B-3, which prevents new stationary and transportation noise sources from creating a nuisance in existing development, and Policy NS-B-14, which discourages new projects that have potential to create ambient noise levels more than 5 dBA DNL above existing background, within 250 feet of sensitive receptors. In addition, Chapter 17-16 of the City of Santa Rosa Municipal Code (Ordinance No. 17-16.20) states that “It is unlawful for any person to operate any machinery, equipment, pump, fan, air-conditioning apparatus or similar mechanical device in any manner so as to create any noise which would cause the noise level at the property line of any property to exceed the ambient base noise level by more than five decibels.”

Test wells would not have permanent pumps in place and would not be used for emergency water supplies. Therefore, test wells would not result in increased ambient noise levels. No impact would occur.

As identified in the Project Description, emergency wells would normally be turned off, and would be permitted to operate for no more than five consecutive days and 15 days each year. Routine maintenance of wells would also occur monthly. Emergency wells would contain a well, motor, pump, piping, control panel and chemical tanks. Operational noise from the emergency well facilities would result primarily from running the well pump. Associated piping and smaller ancillary valves, gauges, pumps, and compressors would also contribute minimally to overall noise generation. Each proposed emergency well would be housed in a building constructed of concrete block with metal roofs, or other similar types of buildings materials. The primary power supply for the wells would be provided by PG&E. When in operation, emergency wells would likely be inaudible outside of the well buildings and would not result in a measureable increase in noise (Illingworth & Rodkin 2013b). Therefore, operation of the emergency wells would not result in a substantial permanent increase in ambient noise and would not generate noise levels in excess of local standards.

Well facilities would have provisions for a drive-up portable generator connection, so that in the event of a power failure, the City could deliver a portable diesel-powered generator to the site, and the well pumps could continue to run during an emergency. However, the portable generators would only operate during periods of power outages when facility operations are vital during emergencies. This would be rare and, both the City's Zoning Code and Noise Ordinance offer exemptions for Emergency Facilities related to public utilities. No impact would occur.

XII. b) Exposure to Groundborne Vibration or Noise – Less than Significant with Mitigation

Construction

Based on Caltrans guidance (Caltrans 2004), this analysis establishes 0.25 in/sec peak particle velocity (PPV) as the significance threshold for construction vibration to avoid damage to buildings from vibration sources. Also based on Caltrans guidance, this analysis establishes 0.1 in/sec PPV as the significance threshold for annoyance (the level at which vibration would be strongly perceptible), which is applied to nighttime construction.

The exact locations of the emergency well facilities and connection pipelines are not currently known. The majority of construction activities would cause vibration levels of less than 0.1 in/sec PPV at a distance of 25 feet. However, if pipeline trench compaction and paving (equivalent to a vibratory roller) occurs within 20 feet of a structure, then construction activities could generate vibration levels exceeding 0.25 in/sec PPV (Illingworth & Rodkin 2013b), which would result in a significant impact.

The estimated vibration level associated with drilling is 0.089 in/sec PPV at a distance of 25 feet (Illingworth & Rodkin 2013b). Nighttime drilling within 20 feet of residential receptors could potentially generate vibration levels greater than 0.1 in/sec PPV. However, such vibration levels would only be expected for at most one night until drilling is deep enough to reduce vibration levels below 0.1 in/sec PPV. This temporary nighttime groundborne vibration impact is considered less than significant.

Mitigation Measure NOI-3: Reduce Vibration Levels during Construction

The City shall substitute the use of vibratory compaction equipment within 20 feet of residential structures with non-vibratory compaction or controlled low strength materials (CLSM) backfill.

Implementation of Mitigation Measure NOI-3 would reduce groundborne vibration impacts to a less-than-significant level at nearby land uses by preventing the use of vibratory compaction equipment within 20 feet of residential structures.

Operation

Following construction, there would be no sources of groundborne vibration or groundborne noise associated with operation of the emergency wells, because well pumps are mounted so as to prevent vibration, and no other components of the well facility would generate vibration. Therefore, no operational impact would occur.

XII. d) Substantial Temporary Increase in Ambient Noise – Less than Significant

Construction and Operation

Haul truck and material and equipment delivery truck volumes associated with the Project would vary on a daily basis. As described in the Project Description, it is anticipated that the peak number of haul trucks delivering material and equipment or hauling away excavated soil on any one day would be approximately eight round trips. In addition, it is anticipated that the maximum daily traffic from the construction crew would be approximately 16 round trips per day. Therefore, the maximum number of trips expected on any one day is anticipated to be 24 round trips.

Calculations made for the worst-case hour assume that all workers would arrive at or leave each site in separate autos or light-duty trucks during a typical hour. The haul truck trips were distributed evenly over an eight-hour work day. Hourly average noise levels generated by Project construction traffic are estimated to be 53 dBA Leq at 50 feet from the roadway centerline (Illingworth & Rodkin 2013b). Estimated noise levels resulting from Project construction traffic are typical or less than baseline residential noise levels along roadways, and impacts would be less than significant.

Following construction, normal operation of an emergency well would result in less than one vehicle trip per day, and impacts would be less than significant.

XII. e, f) Exposure of People Residing or Working near an Airport or Private Airstrip to Excessive Noise Levels – No Impact

Construction and Operation

The Charles M. Schulz Airport is located approximately 2.5 miles northwest of the City's Urban Growth Boundary. There are no existing active private airstrips in the City. The established noise contours of the Charles M. Schulz Airport do not overlap with the City's Urban Growth Boundary, in which test wells and emergency wells would be constructed. Therefore, construction and operation of the Project would not expose workers to airport-related noise. No impact would occur.

	Potentially Significant Impact	Less-Than- Significant With Mitigation Incorporation	Less- Than- Significant Impact	No Impact
XIII. POPULATION AND HOUSING				
Would the Project:				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				✓
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				✓
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				✓

Discussion:**XIII. a) Induce Substantial Population Growth – No Impact**

Implementation of the Project would not result in new development that would directly induce substantial population growth, because the Project does not include new housing or businesses and does not increase employment. In addition, the Project would not indirectly induce population growth due to an increase in the water supply, because emergency well permits limit operation to no more than five days at a time and 15 days a year, and such wells are only permitted for operation on an as needed basis during emergencies, such as a temporary outage of SCWA supplies. Because the wells would not be full-time production wells, and would only be used for emergency purposes, no indirect population growth would occur.

XIII. b, c) Displace Housing and People – No Impact

Implementation of the Project would not displace existing housing units or residents. Therefore, the construction of replacement housing would not be necessary. No impact would occur.

	Potentially Significant Impact	Less-Than- Significant With Mitigation Incorporation	Less- Than- Significant Impact	No Impact
XIV. PUBLIC SERVICES				
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:				
a. Fire protection?				✓
b. Police protection?				✓
c. Schools?				✓
d. Parks?				✓
e. Other public facilities?				✓

Discussion:**XIIV. a, b, c, d, e) Impacts Associated with New or Altered Fire or Police Protection, Schools, Parks, or Other Facilities – No Impact**

As summarized in Section XIII. 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. No impacts would occur.

The Project would not result in an increase in the City's student population, and therefore, no new or expanded schools would be required, and no impacts would occur.

The Project would not result in the increased use of existing parks and other public facilities as it would not induce population growth (see Section XIII. Population and Housing). The Project would also not require the expansion of recreational facilities to maintain acceptable service ratios in parks, and would not require the expansion of the City's equipment storage area/corporation yard. No impact would occur.

	Potentially Significant Impact	Less-Than- Significant With Mitigation Incorporation	Less- Than- Significant Impact	No Impact
XV. RECREATION				
Would the Project:				
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the 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?			✓	

Discussion:**XV. a) Increase in the Use of Existing Facilities Resulting in Substantial Physical Deterioration – No Impact**

The Project would not induce population growth; therefore, the addition of emergency wells would not increase the use of existing parks and other recreational facilities (see Section XIII. Population and Housing). No impact would occur.

XV. b) Include recreational facilities or require the construction or expansion of recreational facilities and have an adverse physical effect on the environment – Less than Significant

The Project would not include construction of new recreational facilities or the expansion of existing recreation facilities. Test wells and emergency wells could potentially be located within existing recreational facilities. During construction, noise levels at recreational facilities would be increased, however, construction noise would be temporary and would vary on a day-to-day basis and be sporadic rather than continuous in nature. Therefore, because of the temporary nature of construction noise, and the availability of alternative recreational facilities within the City that may be visited, the potential temporary impact from construction noise at recreational facilities during construction would be less than significant.

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporation	Less-Than-Significant Impact	No Impact
XVI. TRANSPORTATION / TRAFFIC				
Would the Project:				
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?		✓		
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				✓
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				✓
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			✓	
e. Result in inadequate emergency access?		✓		
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?		✓		

Discussion:**XVI. a) Conflict with an Applicable Plan, Ordinance, Policy, or Program Establishing Measures of Effectiveness for the Performance of the Circulation System – Less than Significant****Construction**

Construction traffic for test wells, emergency wells, and pipelines would result in a short-term increase in construction-related vehicle trips on local City roadways. As described in the Project Description, the construction of individual test wells is anticipated to last approximately twelve weeks, while construction of individual emergency well sites would last approximately six months. Typical daily construction hours would be between 7:00 a.m. and 7:00 p.m. Monday through Friday, and 9:00 a.m. and 5:00 p.m. on Saturdays, except for the period during emergency well drilling and well casing and screen installation. The number of construction-related vehicles traveling to and from a well site would vary on a daily basis, but it is anticipated that the peak number of vehicle trips on any one day would be 12 round trips per test well site, and 24 round trips per emergency well site. In addition to construction-related vehicle trips,

implementation of the Project could also require temporary closures of the public right-of-way, particularly due to pipeline installation and construction of new access driveways for emergency well sites. The combination of additional truck trips plus potential closures of roadway travel lanes would result in a temporary, but potentially significant impact to the performance of the circulation system during construction.

Mitigation Measure TR-1: Traffic Control Plan

The City shall prepare and implement a traffic control plan for construction activities. The traffic control plan shall be prepared in accordance with the City's Standard Conditions of Approval Section C(7)(e) and Caltrans standards, including the latest edition of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones, and shall be coordinated with local transit service providers.

The traffic control plan shall identify designated truck routes, construction site access, address any impacts to the circulation system (including pedestrian and bicycle access and safety), and address construction detours and lane closures as necessary. The traffic control plan shall also identify construction staging and worker parking areas, and consider restrictions on truck trips during peak morning and evening commute hours, if necessary.

The traffic control plan shall also ensure that fire truck and emergency vehicle access be maintained to all buildings during construction. Any detours shall be clearly marked in all areas potentially affected by construction to avoid confusion. The City shall coordinate any required construction detours with the fire and police departments to ensure compatibility with emergency response plans and to maintain continued access for emergency vehicles. The City and its contractor(s) shall be required to have ready at all times the means necessary to accommodate access by emergency vehicles to the site and surrounding areas and through intersections, such as plating over excavations, as needed.

Mitigation Measure TR-1 would require a traffic control plan to be developed for emergency and test well project sites. This mitigation would reduce impacts to less-than-significant levels by including measures to minimize construction impacts on the performance of the circulation system, such as requiring designated truck routes and developing detour plans.

Operation

Policy T-D-1 of the Santa Rosa General Plan 2035 requires the City to maintain a level of service (LOS) D or better along all major corridors. Exceptions to meeting this standard include within the downtown area of the City, and where attainment of the standard would result in significant environmental degradation or the loss of an area's unique character.

According to the Santa Rosa General Plan 2035 EIR, two arterial roadways, both located within the Central City master zone, do not meet the City's standard of LOS D or better. These include College Avenue westbound in the PM peak hour (LOS E), and Guerneville Road – Steele Lane, both directions in the AM peak hour (LOS E) and PM peak hour (LOS F eastbound and LOS E westbound).

As described in the Project Description, emergency wells would be operated on an as-needed basis during emergencies, such as during an emergency outage of SCWA supplies, with operation limited to no more than five days at a time and 15 days a year. The emergency wells would normally be turned off, and regular exercising is anticipated to occur monthly or according to the characteristics of individual

wells. Operation of test wells would require collection of groundwater level measurements at least semi-annually during the spring and fall, with possibly more frequent measurements. One vehicle trip would be required for each well exercising or groundwater level measurement event; the normal operation of emergency wells would therefore result in less than one vehicle trip per day. Therefore, the Project's contribution to existing traffic conditions would be negligible, and impacts to existing LOS on City streets due to operation of the Project would be less than significant.

XVI. b) Conflict with an Applicable Congestion Management Program – No Impact

Construction and Operation

The Sonoma County Transportation Authority (SCTA) is designated as the Congestion Management Agency for Sonoma County; however Sonoma County does not have an adopted Congestion Management Program. Therefore, no conflict with an applicable congestion management program would occur. See Impact XVI.a for a discussion of Project impacts relative to City level of service standards.

XVI. c) Result in a Change in Air Traffic Patterns – No Impact

Construction and Operation

The Charles M. Schulz Airport is located approximately 2.5 miles northwest of the City's Urban Growth Boundary. The Project has no components that would result in a change in air traffic patterns. No impact would occur.

XVI. d) Substantially Increase Hazards due to a Design Feature or Incompatible Use – Less than Significant

Construction and Operation

Test well sites would not include pipelines, access driveways, or other improvements that would affect the safety of the City's transportation and circulation system. Some emergency well facilities would include permanent access via a new paved or asphalt concrete driveway from a public street or other normally accessible roadway. Where there is existing access, no new access would be constructed. New driveways, if required, would be constructed in compliance with the City's Municipal Code, which requires that driveways be clear from obstruction, with adequate visibility for pedestrians, bicyclists and motorists. Parking would be accommodated in and around the well facilities and may include one or more designated parking spaces at each site. Utility connections for emergency well facilities would be located underground and would not introduce new hazards to the transportation and circulation system. Therefore, the Project would result in less than significant impacts related to increased hazards.

XVI. e) Result in Inadequate Emergency Access – Less than Significant with Mitigation

Construction

The duration of construction for an individual test well is anticipated to last approximately twelve weeks, and construction of an individual emergency well is expected to last approximately six months. Typical daily construction hours would be between 7:00 a.m. and 7:00 p.m. Monday through Friday, and 9:00 a.m. and 5:00 p.m. on Saturdays, except for the period of emergency well drilling and casing/screen installation. It is possible that construction within roadways and temporary lane closures would be required during construction along some of the pipeline connection points. Partial lane closures during construction activities would have the potential to affect fire protection services, such as emergency vehicle response times. Therefore, the potential impact on emergency access would be significant.

Mitigation Measure TR-1: Traffic Control Plan

See Impact XVI.a for a description of this mitigation measure.

Mitigation Measure TR-1 would require a traffic control plan to be developed for all emergency and test well project sites, and would include measures to minimize impacts to emergency access, such as detour signage, lane closure restrictions and other safety protocols. With implementation of Mitigation Measure TR-1, construction impacts of the Project would be reduced to less than significant levels for emergency access.

Operation

Operation of the Project would not alter the circulation system because it would not include modifications to existing roadways. As identified in the Project Description, the normal operation of emergency wells would result in the addition of less than one vehicle trip per day to local roadways. Therefore, the Project's contribution to existing traffic conditions would be negligible, and there would be no impact to emergency vehicle access routes or response times.

XVI. f) Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit, Bicycle, or Pedestrian Facilities, or Otherwise Decrease the Performance or Safety of Such Facilities – Less than Significant with Mitigation

Construction and Operation

The City is served by a 154-mile bicycle and pedestrian network that includes bike paths, lanes, boulevards, and routes. The City's Bicycle and Pedestrian Master Plan identifies high-priority implementation projects, and includes policies that aim to improve connectivity throughout the City, improve bicycle and pedestrian safety, improve signage and bicycle parking, and promote awareness. Local transit is provided by the Santa Rosa CityBus, countywide inter-city transit service is provided by Sonoma County Transit (SCT), and regional service is provided by Golden Gate Transit (GGT). The City operates 18 fixed-route lines. SCT operates routes on several Santa Rosa streets, and GGT provides early morning and afternoon commuter service.

The new emergency and test well sites would be located at several locations throughout the City and it is not known if construction of the Project would interfere with bicycle, pedestrian or transit facilities such as bike lanes or routes, sidewalks, or bus stops or routes. Temporary impacts to these facilities could occur if construction activities encroach into City streets, sidewalks or off-street pedestrian and bicycle paths (e.g., during pipeline installation or construction of access driveways). Permanent impacts could occur if a test well or emergency well site permanently displaces or decreases the performance objectives or safety of these facilities (e.g. locating an emergency or test well facility at an existing bus stop, or disconnecting an existing pedestrian or bicycle path).

Therefore, if the siting or construction of emergency and test well facilities encroaches on existing bicycle, pedestrian, and transit facilities, such as bus stops/shelters or bicycle and pedestrian pathways, the potential impact would be significant.

Mitigation Measure TR-1: Traffic Control Plan

See Impact XVI.a for a description of this mitigation measure.

Mitigation Measure TR-2: Minimize Impacts to Bicycle, Pedestrian and Transit Facilities

Construction shall be coordinated with local transit service providers to arrange the temporary relocation of bus routes or bus stops in work zones, if necessary. Pedestrian and bicycle access and circulation shall be maintained during Project construction where safe to do so. If construction activities encroach on a bicycle lane, warning signs shall be posted that indicate bicycles and vehicles are sharing the lane. Detours shall be included for bicycles and pedestrians in all areas potentially affected by construction. Notices shall be provided to advise bicyclists and pedestrians of any temporary detours around construction zones. If bicycle, pedestrian or transit facilities are permanently impacted by construction of test well or emergency well sites, the City shall permanently relocate or reroute these facilities such that the original performance objectives of the facilities are met.

Mitigation Measure TR-1 would reduce impacts to less-than-significant levels by requiring measures to address pedestrian, transit and bicycle access during construction within the public right-of-way. Mitigation Measure TR-2 requires these facilities to be relocated if necessary. With implementation of these measures, the Project's impacts to bicycle, pedestrian and transit facilities would be reduced to less-than-significant levels.

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporation	Less-Than-Significant Impact	No Impact
XVII. UTILITIES AND SERVICE SYSTEMS				
Would the Project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			✓	
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			✓	
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			✓	
d. Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?			✓	
e. 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?			✓	
f. Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?			✓	
g. Comply with federal, state, and local statutes and regulations related to solid waste?			✓	

Discussion:**XVII. a, e) Exceed Applicable Wastewater Treatment Requirements or Capacity – Less than Significant**

Sewage generated within the City is collected in the sanitary sewer system and transported to the Laguna Water Reuse Facility (Laguna Plant). The Laguna Plant is currently permitted to treat up to 21.34 million gallons per day (mgd) average dry weather flow (ADWF), and several projects are planned to increase the Laguna Plant's capacity to 25.59 mgd. In 2012, the Laguna Plant's ADWF was 15.0 mgd.

Construction

Construction of emergency wells and test wells would require well development and various well pumping tests. It is anticipated that up to 2 million gallons of groundwater would be produced from each well during the final well development and pumping tests over a three to five day period for emergency wells or 48 hours for test wells, which would be discharged to either the sanitary sewer system or the local storm drain system. Construction of multiple emergency wells at the same time such that well development and pump test discharges would overlap is not anticipated, given that construction is expected to occur over a

15-year period. Depending on the production capacity of the encountered aquifer formation, the peak discharge rate during well development (lasting for a few hours) could be up to 1,500 gpm, although the typical discharge would be closer to about half that rate.

The capacity of the sanitary sewer pipelines that would receive the discharge is variable. However, as described in the Project Description, the groundwater discharge from well development and testing would be pumped to portable storage tanks, if necessary, and then released to the sanitary sewer such that the discharge rate would not exceed the capacity of the individual sanitary sewer system. The Laguna Plant has the permitted capacity to receive up to 21.34 mgd of wastewater. Construction of the Project would contribute approximately 0.5 to 2 mgd over the course of three to five days per emergency well site, or 48 hours per test well site. Therefore, because construction discharge would be temporary, portable storage tanks would be utilized if necessary, and because the Laguna Plant has the capacity to receive well development and testing discharges, impacts related to exceeding wastewater treatment requirements or the capacity of the sanitary sewer system would be less than significant.

Operation

The new emergency groundwater wells would be operated on an as-needed basis during emergencies, such as a temporary outage of SCWA supplies, but regular exercising of emergency wells would be required to ensure that the wells remain operational over time. No groundwater would be discharged from test wells.

Well exercising would typically occur for one hour per month and for a single, 4-hour period annually. Groundwater pumped during exercising may be discharged to the sanitary sewer system. It is anticipated that approximately 42,000 gallons of groundwater would be produced on the day of a monthly well exercising event, and up to 168,000 gallons of groundwater would be produced from a well during the annual four hour exercising. The City would be required to control the rate of discharge to the sanitary sewer system.

Due to the infrequency of well exercising events and the temporary nature of the discharge, and because the Laguna Plant has capacity to receive such discharges, well exercising is not anticipated to exceed the capacity of the sanitary sewer system or wastewater treatment requirements, and therefore impacts would be less than significant.

XVII. b, d) Require Construction or Expansion of New Water or Wastewater Treatment Facilities or Require New Water Supplies – Less than Significant

Construction and Operation

Water Supply

Policy PSF-F-3 of the Santa Rosa General Plan 2035 directs the City to develop available groundwater resources for the purpose of providing a supplemental source of water in the event of an emergency. Water supply in the City is met by combinations of surface-water delivery from the Russian River and groundwater from wells. Objectives of the Project include developing an additional 8.4 mgd of emergency groundwater capacity, and to protect and enhance the available groundwater resources of the City. The Project is intended to increase the supply of groundwater during emergency supply outage scenarios and would be consistent with Policy PSF-F-3 of the General Plan.

Construction of test and emergency wells could include connection of a pipe or hose to a nearby fire hydrant to provide a supplemental water supply during drilling. Because water needs during drilling are small and the City has sufficient water supplies from existing entitlements and facilities to provide this water (City of Santa Rosa 2011a), and because it would be temporary in nature, impacts from construction water use would be less than significant.

Operationally, the Project would expand water supply facilities consistent with Policy PSF-F-3 of the City's General Plan. Operation of the Project would not require or result in the construction of new water facilities or expansion of existing facilities outside of those included and analyzed in this document. Therefore, impacts would be less than significant.

Wastewater

As described in Impact XVIIa.e., no upgrades or expansion of wastewater treatment facilities is necessary to meet the wastewater treatment and disposal needs of the Project. Therefore, the Project would not require or result in the construction of new wastewater treatment facilities and the impact would be less than significant.

XVII. c) Require Construction or Expansion of New Storm Water Drainage Facilities – Less than Significant

Construction

Construction of emergency and test well facilities would require various well pumping tests after final well development. As described in the Project Description, up to 2 million gallons of groundwater could be produced from each well during the final well development and pumping tests. Pumped groundwater would be discharged to either the sanitary sewer system or the local storm drain system. The capacity of the storm drain system is variable throughout the City. As described in the Project Description, if necessary, the groundwater discharge from well development and testing would be pumped to portable storage tanks then released to a local storm drain, such that the discharge rate would not exceed the capacity of the storm drain. Because construction discharge would be temporary (three to five days per emergency well site and 48 hours per test well site), and because portable storage tanks would be utilized if necessary, impacts from the Project related to exceeding the capacity of the storm drain system or requiring construction of new facilities would be less than significant.

Operation

As identified in the Project Description, the emergency wells would require regular exercising for approximately one hour per month and for a single, 4-hour period annually. It is anticipated that approximately 42,000 gallons of groundwater would be produced on the day of a monthly well exercising event, and approximately 170,000 gallons of groundwater would be produced from a well during the annual four hour exercising. The water would be either discharged to the sanitary sewer system or the local storm drain system. Groundwater from potable water sources is a conditionally authorized discharge under the City's Storm Water Permit. In the event the water is discharged to the storm drain system, the discharge would be volumetrically controlled, and therefore would not exceed the capacity of the individual drainage system. Therefore, because well maintenance discharges are permitted, infrequent, and because measures would be implemented to control the rate of discharge, as per the City's Storm Water Permit, well exercising is not anticipated to exceed the capacity of the storm drain system or otherwise require construction of new facilities, and impacts would be less than significant.

XVII. f, g) Have Sufficient Landfill Capacity and Comply with Statutes Related to Solid Waste – Less than Significant**Construction and Operation**

Solid waste in the City of Santa Rosa is transported to the Central Disposal Site Transfer Station north of Petaluma. Because the Central Disposal Site has reached capacity in the ground, it no longer serves as a landfill and now transfers Santa Rosa's waste to three landfills within the Bay Area. At the transfer station, the solid waste is sorted and hauled to the following landfills: the Potrero Hills Landfill in Solano County (anticipated to be in operation until approximately 2030), the Redwood Sanitary Landfill in Marin County (anticipated to be in operation until approximately 2039), and the Keller Canyon Landfill in Contra Costa County (anticipated to be in operation until approximately 2030) (Santa Rosa 2009b).

The Sonoma County Waste Management Agency, formed in 1992, is the joint powers authority of the nine cities in the County and the County of Sonoma. The specific focus of the Agency's efforts is the implementation of regional waste diversion programs as required by Assembly Bill AB 939. The Sonoma County Integrated Waste Management Plan has a goal of achieving a 70 percent diversion rate by 2015. Santa Rosa currently has several waste reduction and recycling programs in place to divert the amount of waste that is deposited at the landfill.

Construction of emergency wells and test wells would include site excavation, grading and vegetation clearing, including potential tree removal and trimming. Soil would be excavated for installation of well facilities and pipeline installation. Excavated soils would be used for backfill around the facility, or hauled off-site for recycling or disposal as required by City and County regulations. Soils to be disposed of would be tested for hazardous materials prior to disposal. Non-hazardous materials would be taken to an approved local disposal area. Although not anticipated, any excavated materials and construction debris found to contain unacceptable levels of hazardous materials would be hauled to a licensed disposal site. Due to the limited solid waste disposal needs, and the three potential landfill facilities with capacity to accept such wastes, solid waste generated from Project construction activities would not exceed landfill capacity, and impacts would be less than significant.

Operation of the emergency well and test well sites would not require routine disposal of solid waste, therefore the impact from operation of the Project would be less than significant.

4. Mandatory Findings of Significance

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporation	Less-Than-Significant Impact	No Impact
Would the Project:				
a. Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		✓		
b. 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)?		✓		
c. Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		✓		

Discussion

XVIII. a, c) Less than Significant with Mitigation

With implementation of mitigation measures, the Project as a whole does not have the potential to degrade the quality of the environment, including fish or wildlife species or their habitat, plant or animal communities, important examples of the major periods of California history or prehistory, or adverse effects on human beings.

XVIII. b) Less than Significant with Mitigation

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 IS/proposed MND utilizes the "plan" approach, per CEQA Guidelines Section 15130(d), to determine if the Project as a whole makes a considerable contribution to a significant cumulative impact. Cumulative impacts have been identified using the summary of projections contained in the Santa Rosa General Plan 2035 Draft and Final EIR (City of Santa Rosa 2009b and 2009c).

The General Plan 2035 Final EIR identified significant cumulative impacts related to transportation, air quality/climate change, and biological resources (Santa Rosa 2009c). Each of these cumulative impacts is summarized in more detail below.

Transportation Impacts

Significant unavoidable transportation impacts were identified in the General Plan Final EIR related to increased traffic volumes, delay, and decreases in LOS along Highway 101 and other city intersections. Implementation of the Project would not contribute to congestion identified in the General Plan Final EIR. LOS standards regulate long-term impacts due to future development and do not typically apply to temporary construction-related traffic. As described in the Project Description, operation would result in the addition of less than one vehicle per day to local roadways. Such vehicle trips would not cause a substantial permanent increase in traffic levels. Therefore, the Project as a whole would not contribute to this cumulative impact.

Air Quality and Climate Change Impacts

Significant unavoidable air quality and climate change impacts were identified in the General Plan Final EIR due to increased population and vehicle miles traveled (VMT) occurring at rates greater than assumed in regional air quality planning. The General Plan Final EIR identifies a significant unavoidable impact related to conflicts with implementation of the Bay Area Ozone Strategy, as well as with implementation of state or local goals for reducing GHG emissions or generating GHG emissions that would exceed any applicable threshold of significance. Implementation of the Project would not increase population or long-term VMT. In addition, with implementation of Mitigation Measure GHG-1, the proposed Project would comply with the City's recently completed Climate Action Plan for greenhouse gas emission. Therefore, the Project as a whole would not contribute to this cumulative impact.

The General Plan Final EIR also identified a significant cumulative impact related to air toxics and objectionable odors. The cumulative impact was reduced to a less-than-significant level through mitigation requiring new sensitive uses located near high volume traffic routes to utilize air conditioning filtration systems. Implementation of the Project does not include any new sensitive uses or sources of objectionable odors, and would not result in substantial increases in long-term traffic. Therefore, the Project would not contribute to this cumulative impact.

Biological Resources Impacts

A significant biological resources impact was identified in the General Plan Final EIR related to conflicts with local, regional, or State habitat conservation plans for California tiger salamander. With implementation of Mitigation Measure BIO-3, which requires protection of California tiger salamander in accordance with the Santa Rosa Plain Conservation Strategy or any other subsequent guidance adopted by the USFWS, the Project impact on California tiger salamander would be less than significant. Therefore, the Project as a whole would not contribute to this cumulative impact.

No other significant cumulative impacts were identified in the General Plan Final EIR. Therefore, the Project as a whole would not contribute to any significant cumulative impacts.

5. Preparers

The following GHD team members prepared this Initial Study/Proposed MND.

Pat Collins

Project Director

Carrie Lukacic

Project Manager

Brian Bacciarini

Senior Environmental Scientist

Kristine Gaspar

Senior Environmental Planner

Chelsea Phlegar

Planner

Katherine Ross

Planner

Renee Remillard

Graphic Artist

Elissa Overton

Project Management Coordinator

The following subconsultants assisted in preparation of this Initial Study/Proposed MND.

Illingworth & Rodkin – Health Risk Screening Assessment and Noise and Vibration Assessment

James Reyff & Michael Thill

Sonoma State University – Anthropological Studies Center – Cultural Resources

Michael Newland

Sandra Etchell Environmental and Wildlife Biology – Biology

Sandra Etchell

6. References

- Anthropological Studies Center (ASC), Sonoma State University. 2013. *Updated Cultural Resources Records Search*. April.
- Barbour, M. G., T. Keeler-Wolfe, and A.A. Schoenherr. 2007. *Terrestrial Vegetation of California*. University of California Press, Berkeley, Los Angeles, and London.
- Bay Area Air Quality Management District (BAAQMD). 2010. *Bay Area 2010 Clean Air Plan*. September.
- BAAQMD. 2011. *California Environmental Quality Act, Air Quality Guidelines*. May 1.
- California Department of Conservation. 1975. *Generalized Geologic Map of 4-County North San Francisco*.
- California Department of Conservation. 2000. *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos*. August.
- California Department of Conservation. 2012a. *Sonoma County Important Farmland 2010*. October.
- California Department of Conservation. 2012b. *Sonoma County Williamson Act FY 2011/2012*. October.
- California Department of Fish and Wildlife (CDFW). 2013. *Wildlife Habitats – California Wildlife Habitat Relationships System*. Accessed online April 5, 2013 at: dfg.ca.gov/biogeodata/cwhr/wildlife_habitats.asp.
- California Department of Forestry and Fire Protection (CALFIRE). 2008. *Santa Rosa, Very High Fire Hazard Severity Zone in Local Responsibility Area*. November 10.
- California Department of Transportation (Caltrans). 2004. *Transportation- and Construction-Induced Vibration Guidance Manual*. Sacramento, CA.
- California Department of Transportation (Caltrans). *California Scenic Highway Mapping System, Sonoma County*. Accessed April 5, 2013: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm
- California Emergency Management Agency (Cal EMA), Coastal Region. 2009. *Tsunami Inundation Emergency Planning Map for the San Francisco Bay Region*. Accessed online at <http://quake.abag.ca.gov/tsunamis/>
- California Geologic Survey (CGS), California Department of Conservation. 2005. *Special Report 175. Mineral Land Classification of Aggregate Materials in Sonoma County, California*.
- California Native Plant Society. 2013. Online Database. Accessed online March 12, 2013 at: cnps.org/programs/Rare_Plant/program.htm.
- California Natural Diversity Data Base (CNDDB). 2013. *RareFind 3*. Computer printout for special-status species within U.S.G.S. 7 ½ Minute Quadrangles Santa Rosa, Mark West Springs, Calistoga, Kenwood, Glen Ellen, Cotati, Two Rock, Sebastopol, and Healdsburg. California Natural Heritage Division, California Department of Fish and Wildlife, Sacramento, CA.
- City of Santa Rosa. 2005. *Guidelines for the Standard Urban Storm Water Mitigation Plan. Storm Water Best Management Practices for New Development and Redevelopment*. June 3.
- City of Santa Rosa. 2009a. *Santa Rosa General Plan 2035*. November 3.

- City of Santa Rosa. 2009b. *Santa Rosa General Plan 2035 Draft EIR*. March.
- City of Santa Rosa. 2009c. *Santa Rosa General Plan 2035 Final EIR*. June.
- City of Santa Rosa. 2010. *Santa Rosa Bicycle and Pedestrian Master Plan*. September.
- City of Santa Rosa. 2011a. *City of Santa Rosa 2010 Urban Water Management Plan*. June.
- City of Santa Rosa. 2011b. *Santa Rosa Emergency Operations Plan (Draft)*. August 12.
- City of Santa Rosa. 2012. *Climate Action Plan (CAP)*. Adopted June 5, 2012.
- City of Santa Rosa. 2013. *Groundwater Master Plan, Draft*. May.
- City of Santa Rosa. *Municipal Code, 20-36.080 Driveways*.
- Driscoll, Fletcher G. 1986. *Groundwater and Wells, Second Edition*.
- Environmental Protection Agency (EPA). *Final California 2010 Integrated Report (303(d) List/305(b) Report)*.
- EPA. *Cortese List Data Resources*. Accessed April 23, 2013: <http://www.calepa.ca.gov/SiteCleanup/CorteseList/default.htm>
- Etchell. Sandra. 2013. *Biological Resources Analysis, Santa Rosa Groundwater Master Plan*. April.
- Harris, J., 2005. *Pallid Bat (Antrozous pallidus)*. In *Terrestrial Mammal Species of Special Concern in California*.
- Holland, V.L. and D. J. Keil. 1995. *California Vegetation*. Kendall / Hunt Publishing Company, Dubuque, Iowa.
- Illingworth and Rodkin. 2013a. *Santa Rosa Groundwater Master Plan, Health Risk Assessment*. June 11.
- Illingworth and Rodkin. 2013b. *Santa Rosa Groundwater Master Plan, Noise and Vibration Assessment*. June.
- NOAA. 2013. Chinook Salmon (*Oncorhynchus tshawytscha*) Office of Protected Resources. Accessed online March 16, 2013 at: nmfs.noaa.gov/pr/species/fish/chinooksalmon.htm.
- Regional Water Quality Control Board, North Coast Region. 2009. *Waste Discharge Requirements for the City of Santa Rosa, the County of Sonoma, and the Sonoma County Water Agency (Order No. R1-2009-0050)*.
- U.S. Department of Agriculture. 1972. *Soil Survey for Sonoma County, California*.
- U.S. Fish and Wildlife Service (USFWS). 2007. *Santa Rosa Plain Conservation Strategy*. Accessed online April 5, 2013 at: fws.gov/sacramento/ES/Recovery-Planning/Santa-Rosa/es_recovery_santa-rosa-strategy.htm.
- USFWS. 2007. *Santa Rosa Plain Conservation Strategy*. Available online at: fws.gov/sacramento/ES/Recovery-Planning/Santa-Rosa/es_recovery_santa-rosa-strategy.htm. Accessed on April 5, 2013.

- USFWS. 2013. *Sacramento Fish and Wildlife Office. Online Species List*. Federal and Threatened Species that Occur in or may be affected by projects in the Santa Rosa (501B) 7 ½ Minute Quadrangle. Document Retrieved on March 12, 2013. Updated database September 18, 2011.
- U.S. Geological Survey (USGS). 1998. *Open-File Report 97-745C. San Francisco Bay Region Landslide Folio Part C. Summary Distribution of Slides and Earth Flows in the San Francisco Bay Region, California. C.M. Wentworth et. al., Revision 1. February 17*
- USGS. 1999. *Land Subsidence in the United States U.S. Geological Survey Circular 1182*. Website accessed at: <http://pubs.usgs.gov/circ/circ1182/>.
- USGS. 2006. *Liquefaction Susceptibility Map*. Based on work by William Lettis & Associates, Inc., *USGS Open-File Report 00-444*, Knudsen & others, 2000 and *USGS Open-File Report 2006-1037*, Witter & others.
- USGS. Last updated: December 2, 2009. *2008 Bay Area Earthquake Probabilities*. Available online at: <http://earthquake.usgs.gov/regional/nca/ucerf/>
- USGS. 2013. Draft Santa Rosa Plain Groundwater Study, Chapter E. May.
- West Yost & Associates Consulting Engineers (West Yost). 2004. *Evaluation of Potential Impacts Associated with Increased Groundwater Production from Farmers Lane Wells, W4-1 and W4-2 Technical Memorandum*. Prepared for the City of Santa Rosa. July 22.
- West Yost. 2013. *Potential Hydrogeologic Impacts of Proposed Emergency Supply Well Operations by the City of Santa Rosa Technical Memorandum*. May 22.

Appendix B – Mitigation Monitoring Program

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure AES-1: Emergency Well Siting Near State-Designated Scenic Highway 12. Placement of emergency wells within 200 feet of State-designated Scenic Highway 12 between Danielli Avenue and Pythian Drive shall be avoided, if feasible. If placement of an emergency well is necessary within 200 feet of Highway 12 in this area, the facilities shall be designed and implemented so that they do not detract from the scenic quality along Highway 12. Such design and implementation may include, but would not be limited to, designing emergency well facilities to incorporate building features and design elements that are compatible with the surroundings and designing landscaping plans to screen views of new structures and equipment from motorists along Highway 12.	Document that avoidance of 200-foot buffer is infeasible	City of Santa Rosa Director of Utilities	Verify infeasibility prior to initiation of design	Design cannot begin	
	If well is sited within 200-foot buffer, incorporate design elements into plans and specifications	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	If landscaping is prescribed, it shall be completed within one year of completion of construction. Monitoring shall continue for five years.	City of Santa Rosa	Conduct field visit to verify success of plantings for 5 years	Replant, if needed	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure AQ-1: BAAQMD Basic Construction Measures. To limit dust, criteria pollutants, and precursor emissions associated with the construction activity, the City shall include following BAAQMD-recommended Basic Construction Measures in all construction contract specifications for the proposed 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; - 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 pipeline replacement 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 - Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.	Incorporate requirements into plans and specifications	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	Implement during construction	City of Santa Rosa	Field visits during construction	Stop construction until compliance is achieved	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure AQ-2: Reduce Health Risk from Emergency Well Construction. The City shall require construction activities to utilize off-road diesel-powered equipment that meets the U.S. EPA Tier 2 engine requirements for particulate matter emissions, if emergency wells are located within the following distances of sensitive receptors (i.e., residential uses, schools, and overnight health care facilities): - Within 300 feet of sensitive receptors to the north of the emergency well, as defined as the area extending 300 feet to the north between the western and eastern limits of construction; and - Within 300 feet of sensitive receptors to the northeast of the construction site, as defined as the area within the northeast quadrant within 300 feet of the emergency well.	Determine if proposed wells are within specified distances	City of Santa Rosa	Verify presence prior to beginning design	Design cannot begin	
	If wells are located within specified distances, incorporate requirements into plans and specifications	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	Implement during construction	City of Santa Rosa	Field visits during construction	Stop construction until compliance is achieved	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure BIO-1a: Avoid Loss of Listed or CNPS List 1B Plants and their Habitats. The City shall avoid loss of state and federally listed or proposed plant species, state candidates for listing, CNPS List 1B species, and occupied or critical habitat for these species, to the extent feasible. Where avoidance of individuals or habitat is infeasible, the City shall compensate for loss as required by the U.S. Fish and Wildlife Service and/or CDFW. For ground disturbance within vegetated areas (excluding landscape and ruderal areas), reconnaissance-level surveys shall be performed to determine whether the area affected may contain suitable habitat. If habitat for listed or CNPS List 1B plants is not identified during the surveys, then no further mitigation for impacts to target species are necessary under this measure. If the area does contain potential suitable habitat, protocol-level surveys to determine presence or absence of target species shall be conducted prior to construction wherever habitats for these species would be impacted, unless the City assumes presence of the species and implements compensatory measures. The following measures are examples of those that would be required by the U.S. Fish and Wildlife Service and/or CDFW. - Where project activities result in impacts to vernal pool habitats, the conservation measures described in the Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects that May Affect Four Endangered Plant Species on the Santa Rosa Plain, California (Corps File # 22342N) may need to be implemented. - Listed or List 1B plants within the project footprint may need to be transplanted to a mitigation site approved by the California Department of Fish and Game and U.S. Fish and Wildlife Service. Seed from plants unavoidably impacted may need to be collected and preserved for planting on an approved mitigation site. - Where construction activities unavoidably affect a listed or List 1B plant species, corridor widths may need to be limited to a maximum of 30 feet through plant habitat. - All storage and staging areas may need to be located outside listed or List 1B plant habitat.	Conduct reconnaissance-level surveys	City of Santa Rosa	Report of Findings	Construction cannot begin	
	If habitat in reconnaissance-level surveys is identified, conduct protocol-level surveys or assume presence. If presence is assumed, consult with applicable State or federal agency	City of Santa Rosa	Report of Findings. Possible consultation with State and federal agencies	Construction cannot begin	
	If specified plants are identified within work areas, avoid or incorporate agency requirements into plans and specifications	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure BIO-1c: Protect Federally and State Listed Endangered Species. The City of Santa Rosa shall avoid loss of habitat or individuals of federally and State listed endangered species, to the extent feasible. Where avoidance of individuals or habitat is infeasible, the City shall compensate for loss as required by the U.S. Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Wildlife. For ground disturbance within areas of potential habitat of the listed species, reconnaissance-level surveys shall be performed to determine whether the area affected may contain suitable habitat. If the area does contain suitable habitat, protocol-level surveys to determine presence or absence of target species shall be conducted prior to construction wherever habitats for these species would be impacted, unless the City assumes presence of the species and implements compensatory measures. The following measures are examples of those that would be required by the U.S. Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Wildlife. California tiger salamander - Potential habitat for the California tiger salamander is defined as land designated by the Santa Rosa Plain Conservation Strategy Map (last revised by CDFW on April 16, 2007) or any subsequent prevailing documents as requiring mitigation for impacts to the salamander. - Mitigation for impacts to California Tiger Salamander habitat shall be as stipulated in the Santa Rosa Plain Conservation Strategy (USFWS 2005) or any subsequent guidance adopted by USFWS. Such documents include the Programmatic Biological Opinion for U.S. Army Corps of Engineers Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on	Determine if ground disturbance would occur within areas containing potential habitat for California tiger salamander (CTS), California red-legged frog (CRLF), California freshwater shrimp, steelhead, or coho salmon	City of Santa Rosa	Make determination prior to completing 90% plan set	Construction cannot begin	
	Conduct reconnaissance-level surveys for work areas containing potential habitat for CTS, CRLF, California freshwater shrimp, steelhead, or coho salmon	City of Santa Rosa	Report of Findings	Construction cannot begin	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
the Santa Rosa Plain, California (USFWS 2007). Interim mitigation ratios shall be used until the strategy is fully implemented. Mitigation lands shall be located within the watershed where the impact occurs. A conservation easement shall be placed on the mitigation site to preserve the site in perpetuity as wildlife habitat. A long-term management plan shall be developed for the mitigation site to be approved by the USFWS. - Minimization measures contained in Section 5.2 (Minimization Measures) of the Santa Rosa Plain Conservation Strategy (USFWS 2005) or any subsequent guidance adopted by the USFWS shall be implemented during work within areas where California tiger salamanders may occur. - Initial ground disturbing construction activities in habitat shall be limited to the dry season (June through October) when salamanders are not moving between terrestrial habitat and aquatic breeding habitat. California red-legged frog - Potential habitat for the California red-legged frog is defined as the area within 300 feet of the top of bank of a waterbody which the CNDDDB indicates has had sightings of the species within its watershed. - Mitigation for impacts to California red-legged frog habitat (CRLF) shall be as stipulated in the U.S. Fish and Wildlife Service (USFWS) (1999) Programmatic Endangered Species Consultation to avoid impacts to California red-legged frog. - Ground disturbing construction activities shall be limited to the dry season period from April 1 through November 1 to avoid potential red-legged frog dispersal events. - A qualified biologist shall conduct a pre-construction survey immediately preceding any construction activity that occurs in potential CRLF habitat. If no CRLF are observed, wildlife exclusion fencing will be erected around the area to be excavated for the new pond to prevent CRLF from entering the excavation area during construction. Typical wildlife exclusion fence consists of 3-foot tall silt fence that is buried at least 6 inches in the ground. - If CRLF are found, then the USFWS and CDFW shall be notified immediately, and instructions from the USFWS will be followed. - Before the onset of any construction activities, the project engineer and USFWS-approved biologist shall identify locations for equipment, personnel access and materials staging other than those identified in	If habitat in reconnaissance-level surveys is identified, conduct protocol-level surveys for work areas containing suitable habitat for CTS, CRLF, California freshwater shrimp, steelhead, and/or coho salmon; or assume presence and consult with applicable State or federal agency and incorporate into plans and specifications.	City of Santa Rosa	Report of Findings and consultation with State and federal agencies	Construction cannot begin	
	If avoidance is feasible, revise construction boundaries and/or incorporate avoidance measures	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	If avoidance is not possible, document infeasibility, as required by State and federal agencies	City of Santa Rosa	Report of Findings and consultation with State and federal agencies	Construction cannot begin	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
the project description to minimize disturbance to red-legged frog habitat. - Prior to the start of construction, a USFWS-approved biologist shall train all construction personnel regarding habitat sensitivity, identification of special status species, and required practices before the start of construction. - Because dusk and dawn are often the times when CRLF are most actively foraging and dispersing, all construction activities shall cease one-half hour before sunset and shall not begin prior to one-half hour before sunrise. - A USFWS-approved biologist shall be onsite during all ground-disturbance related activities (i.e., vegetation grubbing, excavation) to ensure compliance with these avoidance measures. - After ground disturbing activities are complete, the USFWS-approved biologist or trained construction monitor shall complete a daily log summarizing activities and environmental compliance. - If a CRLF is encountered during construction, all construction activities in the immediate area shall cease until the animal moves away of its own volition. - The fueling and maintenance of vehicles and other equipment shall occur at least 20 meters from any riparian habitat or waterbody. - To prevent CRLF from becoming entangled or trapped in erosion control materials, plastic mono-filament netting (i.e., erosion control matting) or similar material shall not be used within the action area. Acceptable substitutes include coconut coir matting or similar material. California freshwater shrimp, steelhead (Central California Coastal ESU), and coho salmon (Central California Coastal ESU) - Use tunneling methods to cross creeks with 1) surface flow at the time of construction and 2) occupied at any time of year by steelhead, coho salmon (collectively "listed salmonids"), or California freshwater shrimp. If bore pits are required, they shall be located outside the riparian corridor along occupied streams, and no vegetation shall be removed along the streambank. - Open trenching across creeks is permissible with 1) no surface flow at the time of construction and 2) occupied at any time of year by listed salmonids or California freshwater shrimp, with approval of the resource agencies. The construction corridor at the crossing shall be restricted to 30 feet wide. - All temporarily impacted habitat shall be restored to pre-project conditions upon completion of construction activities.	If avoidance is not feasible, compensate for loss of habitat and/or individuals as required by State and federal agencies	City of Santa Rosa	Consult with State and federal agencies	Construction cannot begin	
	Implement avoidance and minimization measures during construction, as required by State and federal agencies	City of Santa Rosa	Field visits during construction	Stop construction until compliance is achieved	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure BIO-1d: Protect Special-Status Aquatic Species. Where pipelines must cross a creek, the City shall ensure that a qualified biologist conduct pre-construction surveys for special-status aquatic species before open-cut trenching across a creek. If any special-status species are found, the City shall avoid the creek, tunnel under the creek, or wait until the creek is dry. All temporarily impacted habitat shall be restored to pre-project conditions upon completion of construction activities.	Complete pre-construction surveys before installation of pipelines across a creek.	City of Santa Rosa	Report Findings	Construction cannot begin	
	If special-status aquatics species are identified, then tunnel under the channel or delay work until the creek is dry. Incorporate into plans and specifications	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	If restoration of riparian vegetation is undertaken, conduct field visits to verify success for five years.	City of Santa Rosa	Field visits during construction	Replant, if necessary	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure BIO-1e: Protect Western Pond Turtle. Where pipelines must cross a creek, or where test wells or emergency wells are sited within 250 feet of a water body, the City shall ensure that preconstruction surveys for the western pond turtle shall be conducted by a qualified biologist. If western pond turtles are found during preconstruction surveys, CDFW shall be notified and individuals shall be captured by a qualified biologist and relocated to suitable areas. If preconstruction surveys identify active nests, a qualified biologist shall establish a no-disturbance buffer zone around the nest using temporary orange exclusion fencing. The radius of the buffer zone and the duration of the exclusion shall be determined in consultation with CDFW. The buffer zone and fencing shall remain in place until the young have left the nest, as determined by the biologist.	If pipeline crosses creek or wells located within 250 feet of a creek, conduct pre-construction surveys.	City of Santa Rosa	Report of Findings	Construction cannot begin	
	If individuals are found, notify agencies and relocate individuals if necessary	City of Santa Rosa	Prior to construction	Construction cannot begin	
	Establish buffer zones with exclusion fencing	City of Santa Rosa	Conduct field visit to verify that exclusion zones are clearly identified.	Construction cannot begin	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure BIO-1f: Protect Yellow-legged Frog. Where pipelines must cross a creek, or where test wells or emergency wells are sited within 250 feet of a water body, the City shall ensure that preconstruction surveys for yellow-legged frogs shall be conducted by a qualified biologist. If potential habitat for the frog is identified, construction activities shall be scheduled so that they do not interfere with the reproductive cycles of the foothill yellow-legged frog, by restricting work within the ordinary high water zone and riparian zone of creeks to the period from June 15 to October 15. Work periods shall be timed to avoid the breeding season of the foothill yellow-legged frog, as well as the majority of the incubation period of frog eggs. If work is required outside of the period from June 15 to October 15, the City shall retain a qualified wildlife biologist to conduct a pre-construction survey for foothill yellow-legged frog. The survey would be conducted within 24 hours prior to the start of construction activities in the creek. If a foothill yellow-legged frog or frog eggs are located in or adjacent to the construction zone, the biologist shall attempt to passively move the species out of the area or the biologist shall capture and move the yellow-legged frog or eggs downstream, out of the construction zone.	If pipeline crosses creek or wells are located within 250 feet of a creek, conduct pre-construction surveys	City of Santa Rosa	Report of Findings	Construction cannot begin	
	If potential habitat is identified, modify construction schedule and work periods to restrict work to between June 15 to October 15.	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	If work within 250 feet of the creek is required outside June 15 to October 15 then conduct pre-construction survey 24 hours prior to work. Relocate frogs or frog eggs if found in the construction area. Install exclusion fencing around work area if feasible once frogs are relocated.	City of Santa Rosa	Report of Findings Conduct field visit to verify that exclusion zones are clearly identified.	Construction cannot begin	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure BIO-1g: Protect Special-Status Birds, Migratory Birds and Raptors during Construction. The City shall ensure that preconstruction surveys for nesting special-status birds, migratory birds, or raptors are conducted for construction commencing between February 1 and October 15. Surveys shall be completed by a qualified wildlife biologist who is experienced in identifying birds and their habitat and surveys shall be completed within 14 days of construction. Trees within a minimum 300-foot radius of proposed construction shall be included in the survey. If the biologist detects no active nesting by special-status or migratory birds or raptors, then work may proceed without restrictions. If migratory bird and/or active raptor nests are identified, the biologist shall determine whether or not construction activities might impact the active nest or disrupt reproductive behavior. If it is determined that construction would not affect an active nest or disrupt breeding behavior, construction may proceed without any restriction. If the qualified biologist determines that construction activities would likely disrupt special-status birds, migratory birds, or raptor nesting activities, then a no-disturbance buffer around the nesting location shall be established to avoid disturbance or destruction of the nest site until after the breeding season or after a wildlife biologist determines that the young have fledged (usually late June through mid-July). The extent of these buffers would be determined by a wildlife biologist in consultation with the CDFW and would depend on the species' sensitivity to disturbance (which can vary among species); the level of noise or construction disturbance; line of sight between the nest and the disturbance; ambient levels of noise and other disturbances; and consideration of other topographical or artificial barriers. Typically a 50-foot buffer shall be required for passerines and a 250-foot buffer for raptors; however the wildlife biologist shall analyze and use the above factors in making an appropriate decision on buffer distances.	If trees located within 300 of construction zone, conduct pre-construction surveys for nests within 14 days of construction for work between February 1 and October 15.	City of Santa Rosa	Report of Findings	Construction cannot begin	
	If nests are within 300 feet, determine if reproductive behavior may be disrupted.	City of Santa Rosa	Report of Findings	Construction cannot begin	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure BIO-1h: Protect Special-Status Bats during Tree or Structure Removal. Not more than two weeks prior to removal of a building or structure, the City shall ensure that a qualified biologist (i.e., one familiar with the identification of bats and signs of bats) survey the building or structure for the presence of roosting bats or evidence of bats. If no roosting bats or evidence of bats are found in the structure, demolition may proceed. If the biologist determines or presumes bats are present, the biologist shall exclude the bats from suitable spaces by installing one-way exclusion devices. After the bats vacate the space, the biologist shall close off the space to prevent recolonization. Building or structure demolition shall only commence after the biologist verifies seven to 10 days later that the exclusion methods have successfully prevented bats from returning. To avoid impacts on non-volant (i.e., non-flying) bats, the biologist shall only conduct bat exclusion and eviction from February 15 through April 15 and from August 15 through October 30.	If construction involves structure removal or if trees will be cut or trimmed at a site r between February 15 and April 15 or from August 15 to October 15, conduct pre-construction surveys for bats. Surveys must occur no more than 2 weeks in advance of structure removal or 30 days in advance of large tree or snag removal.	City of Santa Rosa	Report of Findings	Construction cannot begin	
Prior to the removal of large trees scheduled during seasonal periods of bat activity (February 15 through April 15 and August 15 through October 30), a qualified bat biologist shall conduct a bat habitat assessment to determine the presence of suitable bat roosting habitat. No more than 30 days before removal of any large tree or snag, a biologist familiar with identification of bats and signs of bats will conduct a pre-construction survey for signs of bat activity. If construction is postponed or interrupted for more than 30 days from the date of the initial bat survey, the biologist shall repeat the pre-construction survey. If a tree provides potentially suitable roosting habitat, but bats are not present, bats shall be excluded by temporarily sealing cavities, pruning limbs, or removing the entire tree, in consultation with the qualified bat biologist. Trees and snags with cavities or loose bark that exhibit evidence of use by bats shall be scheduled for bat exclusion and/or eviction, conducted during appropriate seasons (i.e., February 15 through April 15 and August 15 through October 30) and supervised by the biologist.	Implement bat exclusions as necessary	City of Santa Rosa	Conduct field visit to verify that exclusion measures are effective.	Cannot begin construction	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure BIO-1i: Minimize Impacts to American Badger. The City shall ensure that a qualified biologist conduct a pre-construction survey for badger burrows for disturbance in annual grasslands. In the event that a badger burrow is identified within the limits of construction prior to ground-disturbing construction activities (e.g., grading, excavation, trenching), CDFW shall be contacted to determine if any setback requirements would be needed during construction or if active trapping and relocation is an option. If a suspected badger burrow is identified during construction, construction shall temporarily cease in the immediate area, until the CDFW has been contacted. The City shall relocate any badgers as directed by CDFW.	If annual grasslands are present in the construction area, conduct preconstruction surveys.	City of Santa Rosa	Report of Findings	Construction cannot begin	
	If burrows found, notify CDFW and implement setbacks or relocate badgers.	City of Santa Rosa	Report of Findings Verify setback clearly identified prior to construction	Construction cannot begin	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure BIO-2: Avoid or Compensate for Loss of Sensitive Natural Communities. If oaks or evergreen trees greater than 5 inches dbh (diameter at breast height) or chaparral need to be removed for construction of the facility, the City shall retain a qualified biologist to determine if the trees or chaparral is part of a sensitive natural community. Any loss of oak woodland, mixed evergreen forest or chaparral sensitive natural communities shall be avoided. If test wells or emergency wells are located within potential riparian vegetation, or if pipelines are installed across creeks, and open-trench alignments or tunneling pits are located within riparian vegetation, then the City shall conduct pre-construction surveys to identify the extent of riparian vegetation. If the location of the wells or pipelines would cause loss of riparian vegetation, the City shall retain a licensed landscape architect or qualified field biologist to develop a riparian revegetation plan. The riparian revegetation plan shall be based on guidelines maintained by the City and shall include replanting (either on-site or off-site). The goal of such a plan is to ensure no net loss of acreage or of functional value of riparian habitat. The plan shall include planting requirements, monitoring requirements, and an adaptive management strategy, and the City shall implement the plan's provisions.	Determine if oaks, evergreen trees or chaparral need to be removed and if the vegetation is part of a sensitive natural community.	City of Santa Rosa	Report of Findings	Construction cannot begin	
	If an oak, evergreen or chaparral natural community will be impacted then revise the construction boundary or revise the plans to avoid loss.	City of Santa Rosa	Verify in 90% design plan.	Construction cannot begin	
	Determine if construction will impact riparian vegetation, if so, and conduct a pre-construction survey to identify the extent of the riparian vegetation.	City of Santa Rosa	Report of Finding	Construction cannot begin	
	Develop a revegetation plan to replace/restore riparian vegetation	City of Santa Rosa	Verify in 90% design plan set	Construction cannot be completed	
	Implement revegetation/restoration plan within 30 days of completion of construction. Monitoring shall occur for five years.	City of Santa Rosa	Conduct field visit to verify success of planting annually for five years.	Replant, if needed	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure BIO-3: Protect Wetlands and Waters. The City shall conduct a wetlands study for areas that will be permanently or temporarily disturbed to confirm the location, extent, and regulatory status of wetland and water features within the affected parcel. Sites that are entirely paved compacted, or maintained landscaped areas are not subject to this measure. If jurisdictional waters cannot be avoided, the City shall obtain a Clean Water Act (CWA) Section 404 permit from the United States Army Corps of Engineers and a Section 401 permit from the North Coast Regional Water Quality Control Board and shall implement the permit requirements. The City shall ensure that the project will result in no net loss of waters of the U.S. or State by requiring mitigation through impact avoidance, impact minimization, and/or compensatory mitigation for the impact, as determined in the CWA Section 404/401 permits. Compensatory mitigation may consist of the following: - Obtaining credits from a mitigation bank. - Making a payment to an in-lieu fee program that will conduct wetland, stream or aquatic resource restoration, creation, enhancement, or preservation activities (the sum of money paid would be determined during negotiations between the federal, State, and local agencies involved). - Providing compensatory mitigation through aquatic resource restoration, establishment, enhancement, and/or preservation activity.	Conduct wetlands and waters study except for sites that are entirely paved, compacted or maintained landscaping areas.	City of Santa Rosa	Report of Findings	Construction cannot begin	
	Redesign the project to avoid impacts to wetlands and/or waters if feasible.	City of Santa Rosa	Verify in 90% design plan set.	Construction cannot begin	
	If avoidance is infeasible, implement protection measures during construction.	City of Santa Rosa	Verify in 90% design plan set. Field visits during construction	Construction cannot begin Stop construction until compliance is achieved.	
	If wetlands or waters cannot be avoided, then obtain required permits and implement permit requirements.	City of Santa Rosa	Secure permits	Construction cannot begin	
	Develop and implement compensatory mitigation or obtain credits from for wetlands and/or waters that cannot be avoided.	City of Santa Rosa	Purchase credits; or Develop Wetlands and Waters Mitigation Plan as part of the permitting process and conduct field visits to verify success of restoration efforts for five years and report annually to permitting agencies	Construction cannot begin. Replant if needed	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure BIO-4: Comply with City of Santa Rosa Tree Ordinance. The City shall replace any protected or heritage trees in accordance with tree replanting requirements indicated in Santa Rosa Municipal Code Chapter 17-24. Replacement trees shall be planted on the Project site; however, if the Project site is inadequate in size to accommodate the replacement trees, the trees shall be planted on public property with the approval of the Director of the City's Community Development Department.	Conduct survey to determine if protected or heritage trees will be removed.	City of Santa Rosa	Report of Findings.	Construction cannot begin	
	Plant replacement trees if protected and heritage trees must be removed, and conduct field visits to verify success for 3 years.	City of Santa Rosa	Verify in 90% design plan set for tree planting on site or Report of Compliance for trees planted off site.	Construction cannot begin Replant as needed.	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure CR-1: Identify and Avoid or Minimize Impacts to Historical Resources. Prior to ground-disturbing activities, a literature and archival records search shall be conducted to identify known historical resources within or near the Project facility. If potentially historic resources or buildings older than 45 years are located within 100 feet of the Project facility, then a qualified historian or historical architect shall be retained to perform an evaluation of the potential historical resource and determine whether the Project facility would materially impair the resource. If the resource is determined to qualify as a historical resource under CEQA Guidelines section 15064.5(a) and the Project facility would materially impair the resource, such impacts to the historical resource shall be avoided. The improvement shall be designed, constructed, and operated to avoid material impairment of the historical resource. Measures may include, for example, temporary protective barriers, construction worker training, movement of the facility, architectural design changes, or landscape screening. If subsurface historical materials are encountered during construction activities, the piece of equipment that encounters the materials shall be stopped, and the find inspected by a qualified historian/archaeologist. Project personnel shall not collect historical materials. If the historian/archaeologist determines that the find qualifies as a unique historical resource for purposes of CEQA (CEQA Guidelines Section 15064.5(c)(3)), all work must be stopped in the immediate vicinity to allow the archaeologist to evaluate any materials and recommend appropriate treatment. Such treatment and resolution shall include either modifying the Project to allow the materials to be left in place or undertaking data recovery of the materials in accordance with standard archaeological methods. The preferred treatment of the resource is protection and preservation.	Conduct records search	City of Santa Rosa	Verify presence prior to beginning design	Design cannot begin	
	If potentially historic resources are present, then conduct evaluation	City of Santa Rosa	Report of Findings	Construction cannot begin	
	If resource qualifies as historic, incorporate requirements from evaluation into plans and specifications	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	On-site observation and notification as prescribed in evaluation	City of Santa Rosa	Field visits during construction	Stop use of specific piece of equipment if subsurface historical materials are encountered	
	Inspect find and evaluate materials	City of Santa Rosa	Report of Findings	Specific piece of equipment or all work in immediate vicinity cannot continue	
	Implement treatment procedure as described in evaluation	City of Santa Rosa	Field visits during construction	Construction cannot continue	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure CR-2: Identify and Avoid or Minimize Impacts to Archaeological Resources. Prior to ground-disturbing activities, a literature and archival records search shall be conducted with the Northwest Information Center to identify known archaeological resources within the vicinity of the Project facility. If archaeological resources are located within the vicinity of the Project site, then a qualified archaeologist shall be retained to perform an evaluation of the potential resource. If the resource is determined to qualify as an archaeological resource for purposes of CEQA (CEQA Guidelines Section 15064.5(c)) and the Project facility has the potential to adversely affect the resource, such impacts to the archaeological resource shall be avoided. The improvement shall be designed, constructed, and operated to avoid material impairment of the resource. Measures may include, for example, temporary protective barriers, construction worker training, Native American monitoring, or movement of the facility. The City shall notify interested Native American tribes of the siting of specific project facilities, the records search results obtained for each of them, and consult with interested tribes regarding the measures recommended for avoidance of known resources. If archaeological materials are encountered during construction activities, construction in the immediate vicinity shall be stopped, until the find is inspected by a qualified archaeologist. Project personnel shall not collect cultural materials. If the archaeologist determines that the find potentially qualifies as a unique archaeological resource for purposes of CEQA (CEQA Guidelines Section 15064.5(c)(3)), all work must remain stopped in the immediate vicinity to allow the archaeologist to evaluate any materials and recommend appropriate treatment. The City shall notify interested Native American tribes of such discoveries and consult with the tribe from which the resources originated, according to the Native American Heritage Commission. Such treatment and resolution shall include either modifying the Project to allow the materials to be left in place or undertaking data recovery of the materials in accordance with standard archaeological methods. The preferred treatment of the resource is protection and preservation.	Conduct records search	City of Santa Rosa	Verify presence prior to beginning design	Design cannot begin	
	If potential archaeological resources are present, then conduct evaluation	City of Santa Rosa	Report of Findings	Construction cannot begin	
	If resource qualifies as unique archaeological resource under CEQA, incorporate requirements from evaluation into plans and specifications	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	On-site observation and notification as prescribed in evaluation	City of Santa Rosa	Field visits during construction	Stop use of specific piece of equipment if subsurface historical materials are encountered	
	Inspect find and evaluate materials	City of Santa Rosa	Report of Findings	Specific piece of equipment or all work in immediate vicinity cannot continue	
	Implement treatment procedure as described in evaluation	City of Santa Rosa	Field visits during construction	Construction cannot continue	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure CR-3: Procedures for Encountering Human Remains. California Health and Safety Code Section 7050.5 states that it is a misdemeanor to knowingly disturb a human grave. If human graves are encountered, the City and its Contractor shall ensure that work shall halt in the vicinity and the County Coroner shall be notified. At the same time, a qualified archaeologist shall be contacted to evaluate the situation. If human remains are of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of identification, pursuant to Public Resources Code 5097.98. The Native American Heritage Commission will identify the person or persons most likely descended from the deceased. The City shall notify the tribe(s) and coordinate with them regarding the Most Likely Descendant and preferred treatment of the remains with appropriate dignity. A Tribal Treatment Plan covering reburial of human remains and disposition of the artifacts and other cultural resources should be agreed to by all parties.	On-site observation	City of Santa Rosa	Field visits during construction	Stop work in vicinity if human remains are encountered	
	Notify County Coroner	City of Santa Rosa	Field visits during construction	Construction cannot continue	
	Conduct evaluation	City of Santa Rosa	Report of Findings	Construction cannot continue	
	Notify Native American Heritage Commission within 24-hours of identification pursuant to PRC 5097.98	City of Santa Rosa	Field visits during construction	Construction cannot continue	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure CR-4: Avoid or Document Unknown Paleontological Resources. 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.	On-site observation	City of Santa Rosa	Field visits during construction	Stop or divert ground-disturbing work within 50 feet if paleontological resources are discovered	
	Notify qualified palaeontologist	City of Santa Rosa	Field visits during construction	Construction cannot continue	
	Conduct evaluation	City of Santa Rosa	Report of Findings	Construction cannot continue	
	Implement treatment procedure as described in evaluation	City of Santa Rosa	Field visits during construction	Construction cannot continue	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure GEO-1: Siting of Facilities to Avoid Alquist-Priolo Fault Zones. The City of Santa Rosa shall avoid siting new test wells, emergency well facilities, and pipelines within the Rodgers Creek Alquist-Priolo Earthquake Fault Zone. If a pipeline is to be located within Rodgers Creek fault zone, the City shall utilize a professional geotechnical engineer and, when appropriate, a structural engineer to conduct design-level geotechnical investigation to locate faults and identify the appropriate setback between the fault and the facilities. The recommendations made in the geotechnical study shall be incorporated into the final plans and specifications and implemented during construction. The geotechnical study shall identify hazards due to the fault zone, and provide engineering design and construction recommendations to prevent damage. This may include, but would not be limited to, one or more of the following: - At the fault crossing where adequate room exists, trenches can be designed so that a buried pipe could deform and accommodate fault slip without failing. - Design pipeline trenches, pipe embedment with sloping sidewalls, and use pipe embedment materials that offer flexibility with ground movements. - If the pipe runs parallel to a fault, use steel or HDPE pipe with restrained joints as appropriate for the setting. - For fault rupture (the fault slips at or very close to the facility location), if it is not practical to design for the large potential displacements, prepare a contingency plan to repair the pipe (have available sections of pipe and plan to expedite repair). - For creep (one side of the fault is slowly moving relative to the other), install a "rattle box", where the pipe crosses the fault in a box rather than direct burial. - Specify special classes or types of pipelines crossing the active fault zones, such as restrained joint or welded steel pipes. - Install shut-off valves at key locations beyond the limits of the fault zone.	Verify that wells are not located within the Rodgers Creek Alquist-Priolo Earthquake fault zone	City of Santa Rosa	Verify prior to initiation of design	Design cannot begin	
	If wells are located within the Rodgers Creek fault zone, conduct geotechnical study	City of Santa Rosa	Report of Findings	Construction cannot begin	
	Incorporate recommendation from geotechnical study into plans and specifications	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	

**MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure GEO-2: Reduce Risk of Damage from Unstable Soils, Liquefaction, Landslides and Slope Stability, and Expansive Slopes. If emergency well facilities are constructed in areas with slopes exceeding ten percent, as shown on Figure 7-3 of the Santa Rosa General Plan 2035, or in areas of high liquefaction potential, as shown on USGS Open File Report 06-1037, Liquefaction Susceptibility, or in an area with soils with high shrink-swell potential, as indicated in the Sonoma County Soil Survey, then the City shall require a design-level geotechnical study be prepared for the emergency well facility. Such well facilities shall be designed and constructed in conformance with the specific recommendations contained in the design-level geotechnical study, including recommendations for grading, ground improvement, and foundation support. The recommendations made in the geotechnical study shall be incorporated into the final plans and specifications and implemented during construction. The geotechnical study shall identify and propose measures for any soils or geological problems that may affect site stability or structural integrity, including landslide risk, liquefaction potential, seismically-induced landsliding, or weak and expansive soils. This may include, but would not be limited to, one or more of the following: • Removal and replacement of unstable materials in an existing landslide or in an actively eroding area with a stronger material. • Retaining walls or other external applications to strengthen slopes. • Removal of native soil and replacement with an engineered fill material not prone to shrinking and swelling or liquefaction. • Soil stabilization, such as lime treatment to alter soil properties to reduce shrink-swell potential to an acceptable level	If wells are within specified areas, conduct design-level geotechnical study	City of Santa Rosa	Report of Findings	Construction cannot begin	
	Incorporate recommendations from geotechnical study into plans and specifications	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure GHG-1: Reduce Emissions from Construction Activities. The City and its contractors shall implement actions 9.2.1 through 9.2.3 of the City's CAP during construction, as follows: - Action 9.2.1 - Minimize idling times either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes or less (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Provide clear signage at all access points to remind employees of idling restrictions. - Action 9.2.2 - Construction equipment shall be maintained in accordance with manufacturer's specifications. - Action 9.2.3 - Work with project applicants to limit GHG emissions from construction equipment by selecting one of the following measures, as feasible and appropriate to the construction project: - Substitute electrified equipment for diesel- and gasoline-powered equipment where practical. - Use alternative fuels for construction equipment on-site, where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel. - Avoid the use of on-site generators by connecting to grid electricity or utilizing solar-powered equipment.	Incorporate requirements into plans and specifications	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	Implement during construction	City of Santa Rosa	Field visits during construction	Stop construction until compliance is achieved	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure HAZ-1: Siting Near a Known Contamination Site. The City of Santa Rosa shall determine whether known hazardous material sites are located within 250 feet of a test well or emergency well site. If the well location is located near such sites, the City shall require the contractor(s) to implement control measures to protect human health and the environment during construction, including, but not limited to, the following: - Prepare and implement a site-specific health and safety plan in accordance with federal OSHA regulations (29 CFR 1910.120) and Cal-OSHA regulations (8 CCR Title 8, Section 5192) to address worker health and safety issues during construction. The health and safety plan shall identify the potentially present chemicals, health and safety hazards associated with those chemicals, all required measures to protect construction workers and the general public from exposure to harmful levels of any chemicals identified at the site (including engineering controls, monitoring, and security measures to prevent unauthorized entry to the work area), appropriate personal protective equipment, and emergency response procedures. The health and safety plan shall designate qualified individuals responsible for implementing the plan and for directing subsequent procedures in the event that unanticipated contamination is encountered. - Prepare and implement a hazardous materials management plan that specifies the method for handling and disposal of both chemical products and hazardous materials used in construction and contaminated soil and groundwater, should any be encountered during construction. Contract specifications shall mandate full compliance with all applicable local, State, and federal regulations related to identifying, transporting, and disposing of hazardous materials, including those encountered in excavated soil. The contractor shall submit the Plan to the City and the Sonoma County Environmental Health Division for review and approval. Elements of the plan shall include:	Determine if hazardous materials sites exist within 250 feet of proposed wells	City of Santa Rosa	Verify prior to design	Design cannot begin	
	If wells are located within specified area, prepare site-specific health and safety plan and hazardous materials management plan	City of Santa Rosa; Sonoma County Environmental Health Division	Develop plan prior to construction	Construction cannot begin	
	Monitor implementation of measures described in health and safety plans during construction	City of Santa Rosa	Field visits during construction	Stop construction until compliance is achieved	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
- o Measures to address hazardous materials and other worker health and safety issues during construction, including the specific level of protection required for construction workers. - o Provisions for excavation of soil, stockpiling, dust, and odor control measures. - o Measures to prevent off-site migration of contaminated soil and groundwater. - o Location and final disposition of all soil and groundwater removed from the site. - o All other necessary procedures to ensure that excavated materials are stored, managed, and disposed of in a manner that is protective of human health and in accordance with applicable laws and regulations.					

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure HAZ-2: Reduce Wildland Fire Hazards during Construction. Where a new emergency well, test well, or pipeline is to be located within a very high fire hazard severity zone as shown on the latest CALFIRE Fire and Resource Assessment Program Map for Santa Rosa, the City and its contractor(s) shall remove and 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 sites when working in high fire hazard areas to assist in quickly extinguishing any small fires. The contractors shall have on site the phone number for the local fire department(s) when working in fire hazard areas.	Determine if facilities are located within very high fire hazard severity zone	City of Santa Rosa	Verify prior to initiation of design	Design cannot begin	
	If located within specified areas, remove and clear away vegetation as described	City of Santa Rosa	Prior to beginning construction	Construction cannot begin	
	Monitor implementation of measures during construction	City of Santa Rosa	Field visits during construction	Stop construction until compliance is achieved	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure HYD-1a: Management of Well Development and Pump Testing Discharges. During well development and pump testing, if discharging to a local surface water or storm drain, the City shall first obtain coverage under North Coast Regional Water Quality Control Board Order No. R1-2009-0045, Waste Discharge Requirements for Low Threat Discharges to Surface Waters in the North Coast Region. The City shall submit permit registration documents to the North Coast Regional Water Quality Control Board, including development of a Best Management Practices/Pollution Prevention Plan to characterize the discharge and to identify specific measures to control the discharge, such as sediment controls to ensure that excessive sediment is not discharged, and flow controls to prevent erosion and flooding downstream of the discharge. The City shall ensure that the Contractor oversees implementation of the Best Management Practices/Pollution Prevention Plan during well development and pump testing activities, including visual inspections and ensuring overall compliance.	If discharging to local surface water or storm drain, obtain required permits	City of Santa Rosa	Prior to beginning construction	Construction cannot begin	
	Incorporate requirements, including those described in best management practices/pollution prevention plan, into plans and specifications	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	Implement measures during construction	City of Santa Rosa	Field visits during construction	Stop construction until compliance is achieved	

**MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan**

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure HYD-1b: Locate Emergency Wells to Protect Groundwater Quality. Where the City identifies a potential emergency well site within 1,000 feet of a known area of soil or groundwater contamination, the City shall retain a certified hydrogeologist or professional geologist to evaluate the contamination site(s) to determine the nature and status of the contamination and to evaluate the potential water quality impacts from emergency pumping. The hydrogeologist or geologist shall review records from the North Coast Regional Water Quality Control Board and other databases with relevant contamination information. If a known site is identified as “Closed”, “Not Active”, or “No Remediation Required” then the City can install the emergency well without further evaluation of potential groundwater impacts. If open cases are identified within 1,000 feet of the proposed well site, the City's hydrogeologist or geologist shall prepare a Drinking Water Source Assessment according to the Program outlined by the California Department of Public Health. In accordance with the Department's policies, if the Assessment indicates a vulnerability score of 7 or less, the well may proceed at that location. If the vulnerability score is 8 or more, then the well site must be relocated.	Determine if wells are located within 1,000 feet of known soil or groundwater contamination	City of Santa Rosa	Verify prior to initiation of design	Design cannot begin	
	If wells are located within specified area, conduct study and review records	City of Santa Rosa	Report of Findings	Design cannot begin	
	Determine status of known sites	City of Santa Rosa	Verify prior to construction	Design cannot begin	
	If open cases are identified within 1,000 feet of wells, prepare Drinking Water Source Assessment and determine vulnerability score	City of Santa Rosa	Report of Findings	Design cannot begin	
	If Assessment indicates vulnerability score of 8 or more, relocate well	City of Santa Rosa	Relocate prior to design	Design cannot begin	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure HYD-2: Locate Emergency Wells to Reduce Well Interference Impacts at Existing Potable Wells. The City shall site emergency wells to avoid or reduce potential impacts to existing potable water wells where the existing domestic well screen extends into the same intermediate or deep aquifer from which the emergency well would draw groundwater. On the west side of the Rodgers Creek fault zone, the City shall locate emergency wells at least 250 feet away from such existing wells, if feasible. On the east side of the Rodgers Creek fault zone, the City shall locate emergency wells at least 75 feet away from such existing wells, if feasible. If a City emergency well must be located within 250 feet of a such a well on the west side of the Rodgers Creek fault zone, or within 75 feet of such a well on the east side of the fault zone, and the existing well is impacted during emergency pumping, the City shall provide a temporary water supply to the existing well owner equivalent to the water supply made available to City residents during the emergency conditions. Impacts to such an existing well are considered to occur if the existing well production capacity declines to below levels needed to supply potable water for health and safety purposes during operation of the City's emergency well. The City shall continue to provide a temporary water supply until the pre-emergency pumping capacity of the existing potable well resumes following shutdown of the City's emergency well.	Document that avoidance of 250-foot buffer (west side of Rodgers Creek fault zone) or 75-foot buffer (east side of Rodgers Creek fault zone) is infeasible	City of Santa Rosa Utilities Director	Verify infeasibility prior to initiation of design	Design cannot begin	
	If wells are located within specified distances, determine if existing wells are impacted during operation of emergency wells	City of Santa Rosa	Verify during operation of emergency wells	Operation cannot continue	
	If existing wells are impacted, provide temporary water supply to well owners as described	City of Santa Rosa	During operation until the pre-emergency pumping capacity of the existing potable well resumes following shutdown of the City's emergency well	Operation cannot continue	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure HYD-3: Locate Emergency Wells to Reduce Impacts to Surface Water Bodies. The City shall site emergency wells to avoid potential impacts to nearby surface water bodies by locating emergency wells 250 feet away from a water body in areas of the City on the west side of the Rodgers Creek fault zone, or 75 feet on the east side of the fault zone, if feasible. If an emergency well must be located closer than 250 feet of a water body in areas of the City on the west side of the Rodgers Creek Fault, or within 75 feet of a water body in areas of the City on the east side of the Rodgers Creek Fault, the City shall retain a certified hydrogeologist or professional geologist to evaluate the potential impacts from emergency pumping at 700 gpm (or the planned pumping capacity for the individual well) for the maximum operating scenario of 15 days continuous pumping per year. If the hydrogeologist or geologist determines that pumping from an emergency well at the proposed location could cause a reduction of flow or a decline in water levels to surface water bodies, then the City shall change the proposed site of the emergency well.	Document that avoidance of 250-foot buffer (west side of Rodgers Creek fault zone) or 75-foot buffer (east side of Rodgers Creek fault zone) is infeasible	City of Santa Rosa Utilities Director	Verify infeasibility prior to initiation of design	Design cannot begin	
	If wells are located within specified distances, conduct study to evaluate potential impacts of emergency pumping	City of Santa Rosa	Report of Findings	Design cannot begin	
	If study finds that a reduction of flow or decline in water levels would occur, relocate well	City of Santa Rosa	Determine prior to initiation of design	Design cannot begin	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure NOI-1: Reduce Daytime Construction-Related Noise. Construction of a test well or emergency well on a school shall be scheduled to occur when the school is not in session. Daytime construction activities associated with well facility construction occurring within 80 feet of a residential, school, or overnight health care land use shall implement construction noise control measures. Noise control measures may include, but would not be limited to the following: - All equipment driven by internal combustion engines shall be equipped with mufflers which are in good condition and appropriate for the equipment. - The construction contractor shall utilize “quiet” models of air compressors and other stationary noise sources where technology exists. - Unnecessary idling of internal combustion engines shall be prohibited. - At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors. - All stationary construction equipment shall be placed so that the emitted noise is directed away from sensitive receptors nearest the project site. - Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction. - The construction contractor shall designate a “noise disturbance coordinator” who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and institute reasonable measures as warranted to correct the problem (e.g., to ensure that the measures above are implemented). A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.	Determine if wells are on school grounds or within 80 feet of a residential, school or overnight health care land use	City of Santa Rosa	Verify prior to beginning construction	Construction cannot begin	
	If wells are located within specified distances, incorporate noise control requirements into plans and specifications	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	Implement noise control measures during construction	City of Santa Rosa	Field visits during construction	Stop construction until compliance is achieved	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure NOI-2: Reduce Nighttime Construction-Related Noise. Nighttime construction activities associated with emergency well or test well construction occurring within 450 feet of a residential or overnight health care land use shall implement construction noise control measures to further reduce noise. The City shall provide a minimum 24-hour advance notice to residents within 450 feet of a well site prior to nighttime work. The advance notice shall provide information regarding anticipated schedule, hours of operation and a designated project contact person. The designated project contact shall be responsible for responding to noise complaints during the construction phases. The name and phone number of the liaison shall be posted at construction areas and on advanced notifications. This person shall take steps to resolve complaints, including periodic noise monitoring, if necessary. Results of noise monitoring shall be presented at regular Project meetings with the contractor. A reporting program shall be required that documents complaints received, actions taken to resolve problems, and effectiveness of these actions. Additional measures to reduce nighttime construction noise shall also be implemented, which may include, but would not be limited to the following: - To the extent consistent with applicable regulations and safety considerations, operation of vehicles requiring use of back-up beepers shall be avoided near sensitive receptors during nighttime hours and/or the work sites shall be arranged in a way that avoids the need for any reverse motions of large trucks or the sounding of any reverse motion alarms during nighttime work. If these measures are not feasible, trucks operating during the nighttime hours with reverse motion alarms shall be outfitted with SAE J994 Class D alarms (ambient-adjusting, or "smart alarms" that automatically adjust the alarm to 5 dBA above the ambient near the operating equipment). - Maintain orderly conduct among workers, including worker conversation noise during nighttime hours. - Schedule work and deliveries to minimize noise-generating activities during nighttime hours at work sites (e.g., no deliveries or non-essential work). - Maintain the equipment properly to minimize extraneous noise due to squeaking or rubbing machinery parts, damaged mufflers, or misfiring engines.	Determine if wells are within 450 feet of a residential or overnight health care land use	City of Santa Rosa	Verify prior to beginning construction	Construction cannot begin	
	If wells are located within specified distances, incorporate noise control requirements into plans and specifications.	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	Provide notices to residents within 450 feet within designated time frame	City of Santa Rosa	Minimum of 24-hours prior to starting nighttime construction work	Nighttime construction cannot begin	
	Designate a project contact, and post their contact information at construction areas and on advanced notifications.	City of Santa Rosa	Prior to starting nighttime construction	Nighttime construction cannot begin	
	Develop reporting program for noise complaints.	City of Santa Rosa	Prior to starting nighttime construction	Nighttime construction cannot begin	
	Implement nighttime noise control measures during construction.	City of Santa Rosa	Field visits during construction		

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
- Locate equipment at the work area to maximize the distance to noise- Stationary noise sources shall be located as far from sensitive noise receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used. Enclosure openings or venting shall face away from sensitive noise receptors. - sensitive receptors and to take advantage of any shielding that may be provided by other on-site equipment. - Utilize sound blankets to reduce noise from the drilling rig.	Field noise complaints and monitor noise levels.	City of Santa Rosa	Field visits during construction		
	Hold regular Project meetings with contractor.	City of Santa Rosa	Field visits during construction		

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure NOI-3: Reduce Vibration Levels during Construction. The City shall substitute the use of vibratory compaction equipment within 20 feet of residential structures with non-vibratory compaction or controlled low strength materials (CLSM) backfill.	Determine if well sites are located within 20 feet of residential structures				
	If wells are located within specified distance, incorporate requirements into plans and specifications	City of Santa Rosa	Verify in 90% plan set	Construction cannot continue	
	Implement during construction	City of Santa Rosa	Field visits during construction	Stop construction until compliance is achieved	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure TR-1: Traffic Control Plan. The City shall prepare and implement a traffic control plan for construction activities. The traffic control plan shall be prepared in accordance with the City's Standard Conditions of Approval Section C(7)(e) and Caltrans standards, including the latest edition of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones, and shall be coordinated with local transit service providers. The traffic control plan shall identify designated truck routes, construction site access, address any impacts to the circulation system (including pedestrian and bicycle access and safety), and address construction detours and lane closures as necessary. The traffic control plan shall also identify construction staging and worker parking areas, and consider restrictions on truck trips during peak morning and evening commute hours, if necessary. The traffic control plan shall also ensure that fire truck and emergency vehicle access be maintained to all buildings during construction. Any detours shall be clearly marked in all areas potentially affected by construction to avoid confusion. The City shall coordinate any required construction detours with the fire and police departments to ensure compatibility with emergency response plans and to maintain continued access for emergency vehicles. The City and its contractor(s) shall be required to have ready at all times the means necessary to accommodate access by emergency vehicles to the site and surrounding areas and through intersections, such as plating over excavations, as needed.	Prepare traffic control plan in accordance with requirements.	City of Santa Rosa	Prepare prior to construction	Construction cannot begin	
	Incorporate requirements into plans and specifications.	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	Implement during construction.	City of Santa Rosa	Field visits during construction	Stop construction until compliance is achieved	

MITIGATION AND MONITORING PROGRAM
Santa Rosa Groundwater Master Plan

Mitigation Measure	Implementation Procedure	Monitoring Responsibility	Monitoring / Reporting Action & Schedule	Non-Compliance Sanction/ Activity	Monitoring Compliance Record (Name/Date)
Mitigation Measure TR-2: Minimize Impacts to Bicycle, Pedestrian and Transit Facilities. Construction shall be coordinated with local transit service providers to arrange the temporary relocation of bus routes or bus stops in work zones, if necessary. Pedestrian and bicycle access and circulation shall be maintained during Project construction where safe to do so. If construction activities encroach on a bicycle lane, warning signs shall be posted that indicate bicycles and vehicles are sharing the lane. Detours shall be included for bicycles and pedestrians in all areas potentially affected by construction. Notices shall be provided to advise bicyclists and pedestrians of any temporary detours around construction zones. If bicycle, pedestrian or transit facilities are permanently impacted by construction of test well or emergency well sites, the City shall permanently relocate or reroute these facilities such that the original performance objectives of the facilities are met.	Determine if well construction would temporarily or permanently impact bicycle, pedestrian or transit facilities.	City of Santa Rosa	Make determination prior to start of construction	Construction cannot begin	
	If well construction would affect transit facilities, coordinate with local transit service providers.	City of Santa Rosa	Coordinate prior to start of construction	Construction cannot begin	
	Temporarily relocate transit facilities impacted by well construction.	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	Incorporate requirements into plans and specifications.	City of Santa Rosa	Verify in 90% plan set	Construction cannot begin	
	Post warning signs and notices.	City of Santa Rosa	Post prior to beginning construction	Construction cannot begin	
	Implement requirements during construction.	City of Santa Rosa	Field visits during construction	Stop construction until compliance is achieved	
	Permanently relocate or reroute bicycle, pedestrian and transit facilities permanently impacted by well sites.	City of Santa Rosa	Verify in 90% plan set	Construction cannot be completed	