

3. MITIGATION AND MONITORING PROGRAM

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3. MITIGATION AND MONITORING PROGRAM

INTRODUCTION

This Chapter presents the Mitigation and Monitoring Program for the Seasonal Storage Project (SSP). The mitigation measures listed herein are required by law or regulation (Section 3.1); are adopted by the City as part of the Project (Section 3.2); or are recommended by the consultant team (Sections 3.3, 3.4 and 3.5).

Mitigation measures listed below have been identified in Chapter 4, Environmental Analysis, as feasible and effective in mitigating Project-related environmental impacts. The effectiveness of each measure is identified in this Chapter and discussed in detail in Chapter 4.

Legal Basis

The legal basis for the development and implementation of a Mitigation and Monitoring Program lies within the California Environmental Quality Act, Sections 21002 and 21002.1:

- Public agencies are not to approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects; and
- Each public agency shall mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so.

CEQA Section 21081.6 further requires that: the public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. The monitoring program must be adopted when a public agency makes its findings under CEQA so that the program can be made a condition of project approval in order to mitigate significant effects on the environment.

Chapter Format

Section 3.1 Compliance with Existing Programs

This section presents the applicable federal, state, regional, county, and local policies and regulations with which the Project must comply. These laws and regulations are identified in Chapter 2 of the EIR under Required Permits and Approvals.

Section 3.2 Measures Included in the Project

This section presents a listing and description of measures and standards that have been incorporated into the Project Description to avoid or minimize potential

environmental impacts. These measures represent standard engineering, design, construction, and maintenance practices.

However, these measures have been included in this chapter to provide a mechanism for monitoring and to assist the reader in understanding the commitments made by the Santa Rosa Subregional Water Reuse System. Section 3.2 includes measures to be implemented in all phases of the Project, including planning and design, construction, and system operation and maintenance.

Section 3.3 Planning Measures

This section contains mitigation measures to be implemented during the final planning and detailed design of the Project. These measures often require the refinement of the final Project design to accommodate particular environmental constraints.

Section 3.4 Construction Measures

This section contains mitigation measures to be implemented prior to, during, and immediately following Project construction. These measures generally require certain constraints during construction and repair and rehabilitation of impacts resulting from construction of the Project.

Section 3.5 Operation and Maintenance Measures

This section contains mitigation measures to be implemented during operation of the Project. These measures generally require monitoring of system operations over time and the modification of those operations to reduce adverse environmental impacts.

Mitigation Measure Format

Table 3.0-1 presents the format for each mitigation measure and the information that each measure will contain.

Program Implementation and Monitoring

Implementation

The City of Santa Rosa shall be responsible for overall implementation and administration of the Mitigation and Monitoring Program. The City may partner with others who will need to implement the Program as well. The City shall designate a Coordinator to oversee implementation of the mitigation measures and ensure they are completed to the standards specified in the EIR. The Coordinator will also ensure that the mitigation measures are completed in a timely manner.

Duties of the Coordinator include the following:

- Coordinate with applicable agencies that have mitigation monitoring and reporting responsibility;
- Coordinate activities with the construction manager;
- Coordinate activities of all in-field monitors;
- Develop work plan and schedule for monitoring activities;
- Coordination of activities of consultants hired by the City when such expertise and qualifications are necessary;
- Routine inspections and reporting activities;
- Plan checks;
- Assure follow-up and response to citizen inquiries and complaints;
- Develop, maintain, and compile Verification Report form(s) or similar form;
- Maintain a mitigation compliance summary; and
- Coordinate and assure implementation of corrective actions or enforcement measures, as needed.

Table 3.0-1. Mitigation Measure Format

3.X.X Mitigation Measure Title

This is the number and title of the mitigation measure. This is the only portion of the measure that is also presented in Chapter 4, Environmental Analysis. In Chapter 4, the mitigation number and title are cited after the analysis discussion of each impact.

Full text of the Mitigation Measure.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
A list of impacts, by number and title, to which the mitigation measure applies. This list directly corresponds to the impact numbers and impact statements presented in Chapter 4.	The level to which the impact is anticipated to be mitigated. Listed as Less than Significant or Significant

The Impacts Mitigated and discussion of Level of Significance after Mitigation are not included for Section 3.2 measures because they are part of the Project.

Alternatives: The alternatives for which this measure is recommended.

Implementing Agency: The agency or individual that has the responsibility for implementing or performing the measure.

Timing: **Start:** The appropriate time at which the measure is to be implemented.

Complete: The appropriate time at which the measure is to be complete.

Monitoring Agency: The public agency that has the responsibility for monitoring to insure that the mitigation measure is effective in mitigating the impact.

Validation: The means by which the monitoring agency will verify that the measure has been carried out.

Mitigation Monitoring

The implementation of mitigation measures shall be monitored at two levels. The first level of monitoring is done through the use of a Verification Report or similar form. A sample Report is shown as Table 3.0-1. This report is to be completed for each mitigation measure by the in-field monitor, responsible agency, or construction manager (whichever is appropriate for the given action and mitigation measure). Frequency of report completion will vary based on the type of mitigation measure. For example, measures that require modification of final design drawings will only

require that the Verification Report be completed at the time the Final drawings are completed and again when they are approved. However, in-field monitoring for activities such as pipeline construction through a stream may require that a Verification Report be completed daily.

Once a mitigation measure has been completed and the measure needs no further monitoring or follow-up, the in-field monitor, responsible agency, or construction manager shall notify the Coordinator that the measure has been completed. The Coordinator shall be responsible for collecting and maintaining completed Verification Reports.

If the in-field monitor, responsible agency, or construction manager determines that non-compliance has occurred, a written notice shall be delivered to the Coordinator describing the non-compliance and requiring compliance within a specified period of time. If non-compliance still exists at the expiration of the specified period of time, construction may be halted and fines may be imposed upon the party responsible for implementation, at the discretion of the City.

The second level of monitoring shall be done through the completion of an annual Mitigation and Monitoring Program summary. The Coordinator shall create the summary by reviewing all of the Verification Reports and contacting all of the in-field monitors, responsible agencies, and the construction manager to review the status of their respective mitigation measures. The summary shall be prepared annually during construction of major improvements.

Table 3.0-1 Verification Report

Date: _____
Unacceptable

Compliance: Acceptable

Location: _____	Mitigation Measure: _____
	Discipline:
	<input type="checkbox"/> Land Use/Agriculture <input type="checkbox"/> Public Health/Service
	<input type="checkbox"/> Geology <input type="checkbox"/> Noise/Air
	<input type="checkbox"/> Water <input type="checkbox"/> Transportation
Construction Sheet No: _____	<input type="checkbox"/> Biology <input type="checkbox"/> Cultural/Paleontol.
Activity: _____	
Observations: _____	
Recommendations: _____	
By: _____	Approved By: _____
Copies to: _____	
Anticipated Completion Date: _____	
Method of Compliance: _____	
Date Closed: _____	Authorized By: _____

3.1 COMPLIANCE WITH EXISTING PROGRAMS

This section presents the applicable federal, state, regional, county, and local policies and regulations with which the Project may need to comply.

Federal

Archaeological and Historic Data Preservation Act of 1974

Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977;
Section 404

Code of Federal Regulations, Title 40 Parts 6, 51, and 93

Federal Antiquities Act of 1906

Federal Clean Air Act of 1970, amended 1977 and 1990

Federal Endangered Species Act of 1973, as amended

Mining Law of 1872, amended 1988

National Historic Preservation Act of 1972, Sections 106 and 110

National Natural Landmarks Program, Historic Sites Act of 1935

Rivers and Harbors Act of 1899, Section 10

Surface Mining Control and Reclamation Act of 1977

State

California Environmental Quality Act

California Endangered Species Act

California Clean Air Act

California Occupational Safety and Health Administration (Cal-OSHA)

California Department of Fish and Game Code Section 1601-1603

California Department of Fish and Game Wildlife/Hardwood Management
Guidelines (Revised 1994)

California Division of Safety of Dams Regulations

California Health and Safety Code, Section 25500 et seq. - Hazardous Materials
Release Response Plans and Inventory

California Department of Transportation requirements for encroachment permits for work conducted on State highways

Native Plant Protection Act (Fish and Game Code Section 1900-1913)

Public Resources Code, Sections 5097.5 and 30244

Public Resources Code, Sections 5020-5024 (California Register of Historic Places)

Public Resources Code, Section 6301 et seq.

Public Resources Code, Section 6501 et seq.

Title 8, California Code of Regulations, Section 1539 - 1541.1 - Excavations

Title 8, California Code of Regulations, Sections 1539 - 1541.1 - Excavations

Title 8, California Code of Regulations, Sections 1509 & 3203 - Injury and Illness Prevention Program

Title 8, California Code of Regulations, Sections 1597 - 1599 - Vehicles, Traffic Control, Flaggers, Barricades, and Warning Signs

Title 8, California Code of Regulations, Section 5194 - Hazard Communication

Title 22, California Code of Regulations, Section 60301 et seq. - Reclaimed Water

Title 22, California Code of Regulations, Section 66260.1 et seq. - California Hazardous Waste Regulations

Regional

Bay Area Clean Air Plan

Bay Area Air Quality Management District Risk Management Policy

Bay Area Air Quality Management District Rules and Regulations

North Coast Regional Water Quality Control Board Basin Plan

City

City of Santa Rosa

Building and Grading Regulations

Santa Rosa City Code: Historic and Cultural Preservation

Santa Rosa General Plan

Santa Rosa Zoning Ordinance

Santa Rosa Heritage Tree Ordinance

3.2 MEASURES INCLUDED IN THE PROJECT

This section presents a listing and description of measures and standards that have been incorporated into the Project Description.

The following project measures were included in the Program EIR but are not necessary for the Seasonal Storage Project:

- 3.2.4 Implement BMPs for Runoff, Erosion, and Agricultural Chemical Use
- 3.2.7 Pipeline Features in Active Fault Zones
- 3.2.8 Ensure Stored Recycled Water Quality
- 3.2.10 Update Existing Hazardous Material Management Plan
- 3.2.14 Site Facilities to Avoid Airport Land Use Conflict
- 3.2.18 Odor Control for Sludge Handling
- 3.2.19 Minimize Conversion of Visible Timberlands
- 3.2.21 Prevent Storm Runoff beyond Capacity of Drainage Facilities

3.2.1 Purchase Locally Grown or Inspected Plants

The City of Santa Rosa shall ensure that the purchase of plants for wetlands, landscape screening and restoration efforts shall be from locally grown stock or from a nursery that has an approved monitoring program for the glassy-winged sharpshooter.

Implementing Agency: City of Santa Rosa

Timing: **Start:** Upon certification of the EIR

Complete: Prior to the start of landscaping or restoration

Monitoring Agency: City of Santa Rosa

Validation: Specifications for restoration and landscaping contracts

3.2.2 Revegetate Temporarily Disturbed Sites

The City of Santa Rosa shall revegetate sites disturbed or scarred by construction activities. The Revegetation Program shall include the following:

Streams and other Waters of the U.S.

- Restore original contours and drainage patterns.
- Prior to erosive weather events, implement stream bank stabilization measures such as placement of willow wattles at woody crossings and covering disturbed stream banks with a biodegradable fiber (jute) cloth, coconut fiber rolls, or another similar erosion control fabric.
- If the disturbed or scarred site is in a riparian area, collect native seed stock or cuttings near the stream crossing (if feasible).
- Avoid use of soil amendments such as lime or fertilizers.
- Spread a cover of straw, rice straw if available, over disturbed soils and work into soil.
- Apply an organically based tackifier on disturbed areas to reduce air and water erosion of soils.

Upland Non-Urban Sites

- Restore pre-project topographic features. In those cases where full restoration is not possible, graded contours shall be rounded to emulate the natural landforms of the adjacent area.
- Use drought-tolerant plant species common to the disturbed area.
- Collect seed material of woody and herbaceous plants from the construction corridor and/or adjacent undisturbed vegetation during a suitable season for each group of plants. Use potted plant materials to replace woody vegetation (i.e., trees and shrubs).
- Apply dried seed material collected as specified earlier evenly to the finish-graded topsoil surface.

Top Soil

The first six inches of topsoil shall be stripped from areas to be occupied by structures, and areas to be excavated, graded, or filled. The stripped topsoil shall be stockpiled on-site, in designated areas and not mixed. Topsoil shall be stockpiled free from vegetation, trash, large stones, and other extraneous materials, to the extent possible. Stockpiled topsoil shall be protected from disturbance, rainfall, and erosion until it can be placed as final grade or otherwise reused.

Planting Density and Survival Rate

Plants shall be installed, maintained, and replaced such that 120 percent of the design plant density is present on the five-year anniversary of plant installation.

Monitoring

Plant survival shall be monitored and summarized in an annual report. Annual reports shall include recommendations to be implemented to remediate the previous year's failures including replacement planting.

Implementing Agency: City of Santa Rosa

Timing: **Start:** Following completion of construction

Complete: Revegetation shall be completed within one year of completion of construction. Monitoring shall continue for five years.

Monitoring Agency: City of Santa Rosa

Validation: Review annual reports beginning with end of first growing season following construction. Conduct field monitoring on yearly basis or as deemed appropriate. Review annual reports and conduct monitoring annually for five years.

3.2.3 Storm Water Pollution Prevention Plan

The City of Santa Rosa shall prepare a site-specific Storm Water Pollution Prevention Plan for each construction area, and if special measures are necessary for a site, these measures shall be incorporated into the Plan. The Plan shall include the following elements:

- Type of construction allowed during the rainy season.
- Method of protection for new cut and fill slopes and soil stockpiles upon completion of permanent or temporary winter slopes.
- Diversion of runoff away from construction areas that have been denuded or otherwise disturbed.
- Retention of sediment on-site by the use of silt fences, hay bales, sedimentation basins, or other structures.
- Inspection and maintenance schedule for erosion and sediment control facilities.
- Reduction of cut and fill along streams through the use of steepened side slopes, retaining walls and extended culverts.
- Cutting vegetation off at ground level, leaving existing root systems intact.
- Implement BMPs as needed to prevent increases in downstream runoff volume. BMPs are available in California Stormwater Best Management Practice – Construction Handbook, January 2003, available at: www.cabmphandbooks.com.
- Incorporate features (e.g. straw wattles) in temporary stormwater conveyance features to reduce the velocity of stormwater run-off from the construction site to pre-construction levels as a means of preventing off-site erosion.

Implementing Agency: City of Santa Rosa

Timing: **Start:** During the Project design phase.

Complete: At the end of construction.

Monitoring Agency: City of Santa Rosa

Validation: The City shall monitor compliance with the Plan throughout construction.

3.2.5 Standard Engineering Methods for Corrosive Soils

The City of Santa Rosa shall utilize a qualified soil scientist or engineer to conduct a detailed, facility-specific soil survey and determine which facilities require corrosion prevention measures. The survey shall record soil type and soil properties (including pH, salinity, and active sulfides).

The City shall design pipelines that traverse highly corrosive soils with non-corrodible materials such as PVC, shall install an active cathodic protection system, or shall implement other effective corrosion avoidance and/or protection methods.

Implementing Agency: City of Santa Rosa

Timing: **Start:** During Project design.

Complete: At the completion of the design phase.

Monitoring Agency: City of Santa Rosa

Validation: Report that 90% design plans conform with measure.

3.2.6 Standard Engineering Methods for Expansive Soils

The City of Santa Rosa shall utilize a qualified soil scientist or engineer to conduct a detailed, facility-specific soil survey and determine which facilities require shrink swell prevention measures. The survey shall record soil type and soil properties (including shrink swell characteristics). Where the detailed pre-design soil analysis has identified the presence of expansive soils, the following standard engineering methods shall be used to substantially lessen or avoid potential impacts from expansive soils:

- Removal of native soil and replacement with an engineered fill material not prone to shrinking and swelling;
- Soil stabilization, such as lime treatment to alter soil properties to reduce shrink-swell potential to an acceptable level; or
- Deepening footings or other support structures in the expansive soil to a depth where soil moisture fluctuation is minimized.

Implementing Agency: City of Santa Rosa

Timing: **Start:** During Project construction.

Complete: Upon completion of construction.

Monitoring Agency: City of Santa Rosa

Validation: Report that 90% design plans conform with measure.

3.2.9 Protect Creeks from Toxic Discharge

During construction, the City of Santa Rosa shall follow pertinent paragraphs of the Caltrans Manual, California Standard Specifications (Caltrans 1992), Section 7-1.01G which begins, “The contractor will exercise every reasonable precaution to protect streams from pollution with fuels, oils, bitumens, calcium chloride, and other harmful materials.” Measures shall include:

- Construction byproducts and pollutants such as oil, cement, and washwater shall be prevented from discharging into streams and shall be collected and transported to a landfill authorized to accept hazardous wastes.
- No construction vehicles or equipment may be parked within the upland riparian corridor of any stream channel.
- Mobile equipment shall not be refueled or serviced within the riparian corridor.
- Construction material storage areas containing hazardous or potentially toxic materials shall be bermed to prevent the discharge of pollutants to runoff water. These materials shall be stored under cover.
- Utilize good housekeeping practices, safer alternative products where feasible, and employee training programs to prevent or reduce the discharge of pollutants to runoff water from construction activities.
- Construction vehicles and equipment shall be maintained to prevent contamination of soil (from leaking hydraulic fluid, fuel, oil, and grease). Any restrictions on lubricants shall not include lubricants used for tunnel construction which will be permanently encased or isolated from the stream after construction is complete.
- Concrete washout areas shall be designated. Wash-out of concrete vehicles and equipment shall be restricted to designated areas only.
- If dewatering is required, a temporary water treatment facility shall be used to reduce the turbidity of the dewatering water prior to discharge back a receiving water body. The temporary treatment facility shall include a portable sedimentation tank to provide initial settling of sediments followed by a series of pressurized sand filters designed to produce dewatering water than can be discharged back to water bodies without water quality violations.

Implementing Agency: City of Santa Rosa

Timing: **Start:** At the start of construction.

Complete: At the completion of construction.

Monitoring Agency: City of Santa Rosa

Validation: The City of Santa Rosa shall monitor compliance on a schedule consistent with the intensity of construction and the presence of creeks.

3.2.11 Construction Management Program

The City of Santa Rosa shall manage construction to avoid or minimize potential impacts to public health and safety, to the extent feasible. The City shall develop and implement a Construction Management Program (Program), which may include the following measures, or equally effective measures:

- Excavations shall be guarded by readily visible barricades, rails or other effective means to avoid access by the public.
- Local police, public works and fire departments for each jurisdiction (city, county and state) where construction is expected to occur shall receive advance notification of construction activities. Local residents and businesses shall also be notified and access shall be maintained.
- Vehicles shall not park in areas where exhaust systems contact combustible materials. Fire extinguishers shall be available on the construction site when working in high fire hazard areas to assist in quickly extinguishing any small fires. The Construction Manager shall have on site the phone number for the local fire department(s) and shall have a phone available when working in high fire hazard areas should additional fire fighting capabilities be required.
- Prior to construction, retain a Registered Environmental Assessor (REA) to perform a Hazardous Material Project Assessment following portions of the American Society of Testing Materials (ASTM) guidelines near pond locations and near other project facilities to identify potential hazardous waste sites that may affect Project construction activities. During construction the City shall survey all pipeline alignments for contaminated soil and/or groundwater, recording the location, extent, and type of contamination.
- In the vicinity of hazardous materials/waste release sites and areas with naturally occurring subsurface serpentine, construction activities related to the Project that require excavation or exposure of soil or groundwater shall be monitored by the contractor for subsurface contamination. The City shall notify responsible agencies if any hazardous materials/wastes are encountered. Monitoring shall include, at minimum, visual observation by personnel with appropriate hazardous materials training, including 40 hours of Hazardous Waste Operations and Emergency Response (HAZWOPER) training.
- In the vicinity of hazardous materials/waste release sites, groundwater brought to the surface as a result of construction dewatering shall be handled in a manner appropriate to the construction related permits for dewatering. If contamination is suspected or noted during the construction phase, then the groundwater shall be containerized and analyzed for contamination by a laboratory, certified by the California Environmental Protection Agency (CalEPA) Environmental Laboratory Accreditation Program (ELAP), using United States Environmental Protection Agency (USEPA)-approved analytical methods. Where contaminated groundwater is encountered, precautions shall be taken to assure that the installation of piping or other construction activities do not further disperse contamination.

- All potentially contaminated materials encountered during Project construction activities shall be evaluated in the context of applicable local, state and federal regulations and/or guidelines governing hazardous waste. All materials deemed to be hazardous shall be remediated and/or disposed of following applicable regulatory agency regulations and/or guidelines. Disposal sites for both remediated and non-remediated soils shall be identified prior to beginning construction. Management of these sites shall be documented in a Material Management Plan acceptable to applicable agencies. All evaluation, remediation, treatment, and/or disposal of hazardous waste shall be supervised and documented by qualified hazardous waste personnel.

Implementing Agency: City of Santa Rosa

Timing: **Start:** At onset of design.

Complete: At the completion of the construction phase.

Monitoring Agency: City of Santa Rosa

Validation: Report that 90% plans conform with measure.

3.2.12 Mosquito Prevention Program

The City of Santa Rosa shall develop a Mosquito Prevention Program to ensure that facilities are designed in a manner that minimizes favorable conditions for the development of potential mosquito habitat as described in the California Department of Health Services and the Marin/Sonoma Mosquito Abatement District's Criteria for Mosquito Prevention in Wastewater Reclamation or Disposal Projects. The criteria identify three general principles of mosquito control: (1) the manipulation of the physical features of the impoundment, (2) biological control, and (3) chemical control. Specific measures shall include:

- Water bodies may be of any shape but shall not have small coves or irregularities around the perimeter.
- Side slopes shall be as steep as feasible, without jeopardizing slope stability.
- Water bodies shall have an access ramp constructed on an inside slope for launching a small boat to conduct midge sampling and control.
- A maintenance program for weeds and erosion control on the inner slopes of the water body.
- Biological controls shall be used, such as stocking the reservoir with mosquito fish (*Gambusia affinis*).

Implementing Agency: City of Santa Rosa

Timing: **Start:** The Program shall be developed during the design phase. The City shall begin monitoring during construction of reservoirs and created wetlands for conformance to physical features. The City shall monitor monthly when reservoirs and created wetlands are in use.

Complete: Throughout the life of the Project.

Monitoring Agency: City of Santa Rosa

Validation: Report that 90% plans conform with measure.

3.2.13 Prepare Inundation Map and Emergency Evacuation Plan

The City shall prepare an inundation map for the storage ponds (California Water Code, § 6002; California Government Code, § 8589.5). The map shall be submitted to the California Office of Emergency Services (OES) for review and approval. Following approval, OES will transmit the map back to the City, which shall then produce evacuation plans within six months. These plans shall be subject to OES review. The evacuation plans may include:

- Traffic control measures;
- Shelters for evacuees;
- Movement of people without their own transportation and from “unique” institutions;
- Perimeter security for the evacuation area; and
- Reentry of the evacuation area.

Implementing Agency: City of Santa Rosa

Timing: **Start:** Upon certification of the EIR.

Complete: The City shall develop and submit an evacuation plan to the Office of Emergency Services within six months of receiving the approved inundation map.

Monitoring Agency: City of Santa Rosa

Validation: The City shall maintain a copy of the OES approved inundation map and evacuation plan at the Laguna Wastewater Treatment Plant.

3.2.15 Standard Traffic Control Procedures

The City of Santa Rosa shall adopt standard traffic control measures to minimize traffic congestion, traffic hazards, and damage to roads to the extent feasible. Construction flagging and signage, use of plates, and other safety measures shall be in conformance with Caltrans “Manual on Uniform Traffic Control Devices” (Caltrans 2003 Edition with Revisions 1 and 2 Incorporated, dated December 2007). Other measures shall include:

Encroachment Permits

- Obtain all necessary Encroachment and Transportation Permits from the appropriate agencies. The City of Santa Rosa shall consult with the County of Sonoma Department of Transportation and Public Works (DTPW) staff and other affected agencies regarding site-specific details of construction prior to the preliminary design stage.

Emergency Response, Transit and School Bus Routes

- If temporary lane or road closures are required, the City shall contact emergency response (hospitals, police, fire, and ambulance), transit, and school bus providers and inventory the locations of their primary routes that may be affected by the construction.
- Where construction necessitates lane or road closures along emergency response routes, the City shall recommend and obtain approval of alternate routes or other means from the affected service providers, at a minimum of one week prior to construction.
- During construction, the City shall notify the service providers on a weekly basis of the timing, location, and duration of construction activities.

Lane and Road Closures

- Consistent with construction requirements, the minimum number of through traffic lanes shall be closed and the duration of such closures shall be minimized. Where construction requires closure of the road, temporary bypass roads may be built within the construction right-of-way allowing temporary access.
- Where temporary road closure is necessary, a temporary road closure plan shall be developed by the construction manager and submitted to, and approved by, the Traffic Engineer of the affected jurisdiction. The temporary road closure plan shall include alternate detour routing and notification of local fire and police departments and emergency service, transit and school bus providers

Access to Businesses and Residences

- The City shall provide public facilities, businesses, and residences within 500 feet of the construction zone with a notification packet that describes the construction activities scheduled for their neighborhood.

- The City shall maintain pedestrian and vehicular access to public facilities, businesses, and residences along the route during commute hours, and shall minimize the closure of pedestrian and vehicular access at other times. Peak commute hours are between 7:00 a.m. and 9:00 a.m. in the morning and 4:00 p.m. and 6:00 p.m. in the evening.

Repair Road Damage

- Prior to construction, the City shall prepare a summary of baseline conditions for roads scheduled to have construction on or adjacent to them. The survey shall identify road name, length, and width; surface type and condition; and shoulder surface type and condition.
- Within one year of completion of construction, roads damaged by construction traffic or pipeline construction shall be repaired to a condition equal to or better than that existing prior to the construction activity.

Park within Construction Easements

- The City shall establish construction staging areas. Construction worker vehicles, construction equipment not in use, and stored materials shall be kept within the staging area. Designated areas within the construction easements shall be designed to accommodate all construction-related activity, and the designated areas shall be maintained for parking throughout the duration of the construction.

Construction Access to Kelly Farm from Highway 12

- The City shall restrict all construction traffic using the access road to Kelly Farm from Highway 12 to “right in, right out” movements. In addition, no heavy truck traffic shall be allowed on Highway 12 after 4 PM.

Temporary Caution Signage

- The City shall install temporary caution signs on the Joe Rodota Trail during construction, as well as on any other bicycle or pedestrian trails that cross an access road in the vicinity of the SSP. Signs shall alert bicycle and pedestrian traffic to the presence of construction traffic and to use caution when crossing roads.

Implementing Agency: City of Santa Rosa

Timing: **Start:** During construction

Complete: Implementation shall continue throughout construction.

Monitoring Agency: City of Santa Rosa

Validation:

The City shall comply with this measure prior to starting construction near the affected roadway.

3.2.16 Dust Control Program

The City of Santa Rosa shall reduce dust generation during construction, as recommended by USEPA, California Air Resources Board, Bay Area Air Quality Management District, Northern Sonoma County Air Pollution Control District. Measures shall include:

Basic Dust Control Program

- The contractor shall implement the following dust control measures during all construction phases:
- Water active construction areas at least twice daily and more often during windy periods. Active areas adjacent to residences shall be kept damp at all times.
- Cover hauling trucks or maintain at least two feet of freeboard. Dust-proof chutes shall be used as appropriate to load debris onto trucks during demolition.
- Pave, apply water at least twice daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas.
- Sweep daily (with water sweepers) paved access roads, parking areas, and staging areas and sweep streets daily (with water sweepers) if visible soil material is deposited onto the adjacent roads.
- Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously-graded areas that are inactive for 10 days or more).
- Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles.
- Limit traffic speeds on any unpaved roads to 15 mph.
- Replant vegetation in disturbed areas as quickly as possible.

Enhanced Dust Mitigation Plan

- The construction contractor shall implement the following measures for construction sites larger than 4 acres in size, within 100 feet of sensitive receptors such as residences, or where more than 3 pieces of heavy-duty construction equipment are operating simultaneously.
- At off-road construction sites, install wheel washers for exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.
- If necessary, install windbreaks, at the windward side(s) of construction areas to prevent blowing dust from impacting sensitive receptors or causing a nuisance.
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph and visible dust emissions cannot be prevented from leaving the construction site(s).
- Limit areas subject to disturbance during excavation, grading, and other construction activity at any one time.

3.2.17 Equipment Exhaust Control Program

The City of Santa Rosa shall implement the following equipment emissions control programs for construction larger than 4 acres in size, within 100 feet of sensitive receptors such as residences, or where more than 3 pieces of heavy-duty construction equipment are operating simultaneously. Measures shall include:

- Reduce unnecessary idling of construction equipment and avoid staging equipment within 200 feet of sensitive receptors.
- Where diesel-fueled construction equipment is used, require contractors to certify compliance with the California Air Resources Board's Airborne Toxic Control Measures for Stationary Compression-Ignition Engines.
- Properly maintain construction equipment.
- Designate a Disturbance Coordinator responsible for ensuring that mitigation measures to reduce air quality impacts from construction are properly implemented.

Implementing Agency: City of Santa Rosa

Timing: **Start:** With initiation of construction.

Complete: At the completion of construction.

Monitoring Agency: City of Santa Rosa

Validation: Annual report during construction.

3.2.20 Control of Light and Glare

The City of Santa Rosa shall specify installation of shielded low-intensity outdoor lighting at all ponds and pump stations. The City shall install controls which will provide for non-continuous operation of the lighting. Lighting at these facilities shall be turned on only on an “as needed” basis while monitoring and maintenance is being performed and when access to the building is necessary.

Implementing Agency: City of Santa Rosa

Timing: **Start:** At the beginning of design

Complete: Throughout the life of the Project or until operation of a facility ceases.

Monitoring Agency: City of Santa Rosa Public Utilities

Validation: Report that 90% design plans and/or specifications conform with measure.

3.2.22 Adjust Facility Design to Avoid Impacts on Utilities

The City of Santa Rosa shall site facilities to avoid impacts to public or private wells or septic systems. Final design shall be prepared in accordance with Title 22 separation guidelines. One or more of the following options shall be implemented, depending upon site-specific conditions:

Septic System and Reserve Areas

- Native, fine-grained, compacted soil or Controlled Low Strength Material (CLSM) shall be used as backfill around pipelines when constructing greater than 25 feet but less than 50 feet from a septic system or reserve area.
- CLSM shall be used as backfill around the pipeline when constructing between 15 and 24 feet from a septic system or reserve area.
- If closer than 15 feet but not through a septic system or reserve area, portions of leachlines shall be relocated, if possible, in another portion of the property to obtain a minimum setback of 15 feet from the pipeline. CLSM shall be used as backfill over the pipeline (see No. 2 above).
- Construction of the pipeline through or below a leachfield shall be avoided whenever feasible. If avoidance is infeasible, then the City shall contact the Sonoma County PRMD Well and Septic Division, and shall incorporate the Division's recommendations.
- Relocation of septic system lines shall require a review and approval of plans by the property owner and the Sonoma County PRMD Well and Septic Division prior to leachline relocation. If leachlines that need to be relocated cannot be relocated due to limited space or poor soil conditions, other mitigations shall be implemented on a case-by-case basis by consulting with the Sonoma County PRMD Well and Septic Division personnel and property owner.

Wells/Water Sources for Consumption

- Pipelines shall not be constructed closer than 20 feet from a well. In general, pipelines shall be designed to be at least 25 feet from a well.
- In areas where pipelines must be constructed between 20 and 25 feet from a well, the pipeline shall be steel encased.
- If the pipeline is to be constructed between 25 and 50 feet from a well, the pipeline shall be encased with CLSM.
- If the pipeline is to be constructed through a spring that is used as a water source, the contractor shall use permeable trench bedding backfill so as not to impede the water flow through the trench to within 20 feet of the source.

Monitoring Wells

- Pipeline trenches shall be set back a minimum of 5 feet from the center of a monitoring well. A 3-foot set back is permissible with approval of the North Coast Regional Water Quality Control Board.
- Monitoring wells within the construction zone shall be clearly identified in the field prior to construction.

Implementing Agency: City of Santa Rosa

Timing: **Start:** During preliminary design

Complete: Prior to the beginning of construction.

Monitoring Agency: City of Santa Rosa

Validation: Report that 90% design plans conform with measure.

3.2.23 Flood Storage Management

The City of Santa Rosa shall determine the extent to which facilities reduce storage capacity for 100-year floods and/or increase runoff volume. The City shall compensate for any reduction of flood storage capacity and/or runoff volume increase by increasing storage capacity on the same property or a nearby property such that there is not a significant loss of such capacity. Compensatory measures may include onsite detention.

Implementing Agency: City of Santa Rosa

Timing: **Start:** At onset of project design.

Complete: Prior to operation.

Monitoring Agency: City of Santa Rosa

Validation: Report on method of compensation prior to operation.

3.2.24 Standard Urban Storm Water Mitigation Plan (SUSMP)

The City of Santa Rosa shall comply with the local SUSMP requirements. The SUSMP requirements are part of the Storm Water Management Plan that has become an enforceable part of the municipal storm water permit for the City of Santa Rosa. The City shall prepare a Preliminary Storm Water Mitigation Plan, a Final Storm Water Mitigation Plan, and a Written Certification of Best Management Practices (BMPs) installation in accordance with local Standard Urban Storm Water Mitigation Plan (SUSMP) requirements. The Plans shall include the following elements:

Preliminary Storm Water Mitigation Plan

- Project description
- Impervious surface and proximity worksheets
- Estimated pre- and post-development runoff calculations
- Identified pollutants of concern
- Types of BMPs selected to mitigate pollutants
- Types of BMPs selected to limit channel-forming discharges
- Preliminary treatment control BMP sizing
- Waiver documents, if any
- Responsibility for BMP maintenance
- Location and conceptual design of BMPs on project drawings

Final Storm Water Mitigation Plan

- Detailed hydraulic calculations identifying the sizing criteria for each storm water treatment control BMP based upon the anticipated flow and/or volume.
- Maintenance plan, including maintenance assurances and funding mechanism.
- Plan view of the project showing all storm water related source and treatment control BMPs. The plan view may be included as part of the grading plan, site plan, other related plan, or on a separate plan sheet, included in the public improvement plans or building permit application.
- Construction details for each source and treatment control BMP.

Written Certification of BMPs Installation

After the BMPs have been installed, the project designer shall prepare and sign a written certification that the BMPs were installed as intended by the designer, or for manufactured BMPs, as recommended by the manufacturer. The written certification of BMP installation must be received by the County before acceptance of public improvements for BMPs located within the public right-of-way or public easements.

Implementing Agency: City of Santa Rosa

Timing: **Start:** During the Preliminary design phase.

Complete: At the end of construction.

Monitoring Agency: City of Santa Rosa

Validation: The City shall monitor compliance with the Plan throughout construction.

3.2.25 High Water Level Sensor

Storage pond instrumentation shall include a high water level sensor and alarm. The alarm would either alert City staff that the water level is reaching pond capacity, or would shut down the pump automatically to reduce the potential for a release of stored water via the pond spillway.

Implementing Agency: City of Santa Rosa

Timing: **Start:** At the beginning of design.

Complete: At the end of construction.

Monitoring Agency: City of Santa Rosa

Validation: Report that 90% design plans and/or specifications conform with measure.

3.3 PLANNING MEASURES

This section contains mitigation measures to be implemented during the planning and design phase of the Project. These measures often require the refinement of the final design to accommodate particular environmental constraints.

The following planning measures were included in the Program EIR but are not necessary for the Seasonal Storage Project:

- 3.3.1 Site Facilities to Achieve Compatible Land Use
- 3.3.3 Site Facilities to Avoid Status Farmland and Land under Williamson Act Contracts
- 3.3.4 Slope Stabilization Design
- 3.3.5 Site Facilities to Avoid Alquist-Priolo Zones
- 3.3.6 Earthquake Preparedness and Emergency Response Program
- 3.3.7 Reduce Risk of Damage due to Liquefaction
- 3.3.11 Avoid Loss of Sensitive Plant Species
- 3.3.16 Pump Station and Facility Noise Control

3.3.2 Replacement of Open Space Value

The City shall contribute funds to the Sonoma County Agricultural Preservation and Open Space District to compensate for land to be used for a facility on land which is encumbered with District conservation easements if the City's use is determined incompatible or inconsistent with the District's interest as determined by the language in the easement. The contribution of funds would be based upon the total acreage of incompatible or inconsistent use of lands to be used by the City, the extent of inconsistent use, and the value contributed by the resource to the open space values for which the easement was originally purchased. The City's monetary contribution shall be equal to the open space and natural resource value of the total acreage to be used for the facility. The terms of use and compensation shall be subject to approval by both the District and the City, and shall be incorporated in a Memorandum of Agreement to be signed by the City and the District. All monies contributed by the City shall be utilized in accordance with the Sonoma County Open Space Expenditure Plan. If the City and District are unable to agree on the appropriate compensation in lieu of eminent domain, the City shall proceed with necessary condemnation proceedings against the District where compensation is determined through the judicial process or by settlement in lieu of further condemnation proceedings.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
1.6. The Storage and Pump Station Component may convert public open space for uses not in accordance with restrictions on use of the open space	Less than Significant

Alternatives: KF1, KF2, BF1, BF2, and AF

Implementing Agency: City of Santa Rosa

Timing: **Start:** Upon certification of EIR.

Complete: Prior to the beginning of construction.

Monitoring Agency: City of Santa Rosa

Validation: A Memorandum of Agreement shall be signed between the City and the District prior to the beginning of facility construction.

3.3.9 Well Protection Program

The City of Santa Rosa shall monitor water quality and water levels in water wells potentially affected by SSP facilities before and after construction. If changes caused by the project are detected after construction that are deemed deleterious to public health by the Sonoma County PRMD Well and Septic Division staff or under applicable regulation, or if water level monitoring indicates that wells may become unproductive as a result of reduced upgradient inflows, one or more of the following measures, or alternative measures of equivalent effectiveness, shall be implemented:

- Drill a new well that is not significantly affected by the facility;
- Modify the existing well, e.g., provide screening in a different stratum, such that the existing well is not significantly affected facility;
- Provide wellhead treatment system for the constituents that are causing the public health concern;
- Provide a replacement water supply

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
5.3 & 5.4. The Storage Component may lower groundwater levels at existing wells or lower groundwater levels near future water supplies.	Less than Significant - KF1, KF2

Alternatives: KF1 and KF2

Implementing Agency: City of Santa Rosa

Timing: **Start:** At the beginning of the design phase.

Complete: Prior to construction

Monitoring Agency: City of Santa Rosa

Validation: The City shall conduct an annual review of the groundwater monitoring program throughout the life of the Project unless all drinking water supplies in affected area have been replaced.

3.3.10 Avoid Loss of Endangered, Threatened, or Rare Species and their Habitats

The City of Santa Rosa shall either avoid take or obtain formal incidental take coverage with the required compensatory measures where avoidance cannot be achieved for the affected categories: state and federally listed or proposed species, state candidates for listing, California Native Plant Society (CNPS) List 1B species, and occupied or critical habitat for these animal species. For state fully protected species, no take is allowed and therefore avoidance shall be the only option. For taxa that do not have formal take protection (e.g., CNPS List 1B plants and federally-listed plants where there is no federal nexus), the City shall avoid, minimize, and/or compensate (in that order of preference) at the same level of mitigation as those taxa that are afforded formal take protection.

Reconnaissance-level surveys shall be (or have been) performed to determine whether the area potentially affected by the project may contain habitat suitable for such species. 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 will be impacted. Protocol-level surveys shall be conducted by qualified biologists familiar with the fauna and flora of Sonoma County. All protocol-level surveys shall be coordinated with the appropriate responsible agencies, i.e., U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS, a.k.a. NOAA-Fisheries), and/or California Department of Fish and Game (CDFG). If no protocol exists for a particular species (e.g., listed salmonids), the biologists would consult with the responsible agency(ies) (e.g., NMFS and CDFG) to determine the timing and intensity of surveys necessary to support a conclusion of absence from the site.

If target species are found to be absent from the project area, then the City shall obtain concurrence from the responsible agencies of that finding. No protocol-level surveys to determine presence or absence or further mitigation for impacts to target species are necessary under this measure if the species is found to be absent from the project area and if the responsible agencies concur with the finding. Even if there is no direct take of individuals, the City shall mitigate for the take of habitat as appropriate.

As part of the mitigation process, the City shall submit a site-specific mitigation and compensation program for the affected resource acceptable to USFWS, NMFS, or CDFG as applicable. If a species is listed as endangered, rare, or threatened by the state or U.S., or is otherwise determined to be "rare" under CEQA, and either the habitat or individuals are found to occur within the affected area and cannot be avoided, compensatory actions (examples of which are described below) shall be undertaken such that the number of individuals is not reduced and the range of the species is not restricted. As a performance standard, the compensatory actions shall ensure that there is no net loss of habitat for such species in terms of both quantity and quality. Compensatory actions may include habitat restoration and/or preservation.

Avoidance and compensatory measures which may be required for specific species are as follows. The list of species that follows is not exhaustive, and additional species may be potentially present for which these mitigation measures apply. The specific avoidance and

compensatory measures shall be determined on a case-by-case, species-by-species and habitat-by-habitat basis, working in conjunction with the appropriate wildlife agency(ies), and shall ensure adherence to the performance standard set forth above.

Bald Eagle

- Tree trimming and tree removal within 1,000 feet of an active nest site or one that had been occupied in the last 10 years shall be limited to the minimum number of trees possible. Trimming of trees shall be limited so as not to jeopardize the survival of trees, particularly those that could be used as nest trees.
- Within occupied habitat, construction shall be limited to the minimum width corridor possible and not greater than 50 feet wide. The perimeter of the construction corridors shall be clearly delineated.
- Staging and materials storage areas shall not be located within 1,000 feet of an active bald eagle nest site.
- Impacts to trees used for nesting within the last 10 years shall be avoided to the maximum extent possible. Nest trees may be used from year to year and loss of a nest tree may result in abandonment of a site. Nest trees that must be removed shall be removed during the non-breeding season.
- For preconstruction survey protocols and protocols for construction activities in the vicinity of an active or bald eagle nest, see section 3.4.1 Protect Active Raptor Nests.
- In the event complete avoidance of nest trees is not feasible or minimization of the construction corridor to 50 feet is not feasible, compensatory measures shall be taken. The nature of the compensation would reflect the specific circumstances, but must result in the performance standard of no net loss of overall habitat for the birds. Compensatory actions could include preservation of habitat and creating new habitat by planting trees. The compensatory plan shall be submitted to the USFWS and CDFG for their review and approval. Failure of an agency to respond would be accepted as tacit approval.

California Tiger Salamander

- “Habitat” for the California tiger salamander is defined as land designated by the Santa Rosa Plain Conservation Strategy (USFWS 2005) 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 prevailing guidance adopted by the 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. The City shall provide assured funding for the long-term maintenance and monitoring of the mitigation area.

- Minimization measures contained in Section 5.2 (Minimization Measures) of the Santa Rosa Plain Conservation Strategy (USFWS 2005) or any subsequent prevailing 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.
- Compensation for impacts to California tiger salamander habitat shall include programs that address the various life stages of this species.
- In the event that permanent impacts are incurred in a conservation area as designated by Santa Rosa Plain Conservation Strategy (USFWS 2005), the City shall compensate with land either within the conservation area or contiguous to the conservation area. That is, in order to contribute to the preservation goals of a given conservation area, compensation shall be in the form of land rather than buying mitigation credits, unless that mitigation bank is within the affected conservation area.

For Aquatic Species (California Tiger Salamander, Steelhead, Chinook Salmon, and Coho Salmon)

The following are generic measures for construction practices that apply generally to all special-status aquatic species.

- Equipment maintenance and fueling areas for mobile equipment within 200 feet of an aquatic site shall be behind a containment barrier that would prevent any spilled or leaked fuel from running into the aquatic site. Servicing of mobile equipment shall be limited to within designated areas away from sensitive habitats. Motorized equipment used during construction or demolition activities shall be checked daily for oil, fuel, and coolant leaks prior to initiating work. Any equipment found to be leaking fluids shall not be used in or within 200 feet of aquatic habitat features to minimize the chances of contaminating the habitat.
- An erosion control plan and emergency response and cleanup plan shall be prepared prior to beginning work adjacent to streams. The plan shall detail the methods to contain sediment runoff into the creek and to contain and cleanup spills of petroleum products or other hazardous materials in the work area.
- All construction personnel shall receive environmental training about the sensitive nature of the listed species in the project area. This training shall include a description of the species, comparison of the species to other similar species, life history, and a description of all project measures in place to protect the species.
- Preconstruction surveys for each of the listed species shall be conducted by a qualified biologist no more than 30 days prior to the initiation of construction activities at the site.

- Aquatic construction sites (i.e., the immediate area of ground disturbance by the Project) shall be monitored during Project activities to insure that no listed aquatic species are present. If such species are present, a qualified biologist shall capture and relocate the animals at least 300 feet from the Project area. Capture and relocation of listed species will be carried out by a qualified biologist authorized by the NMFS and/or USFWS and CDFG to conduct such activities. Relocation of listed species will be coordinated with the NMFS and/or USFWS and CDFG.
- Streambed disturbance and placement of fill shall be kept to a minimum necessary for the installation or construction of the Project structure.

Listed or CNPS List 1B Plants

- Reconnaissance-level surveys shall be (or have been) performed to determine whether the area potentially affected by the project may contain habitat suitable for CNPS List 1B plants. If the area does contain suitable habitat, protocol-level surveys 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. Focused surveys for the federally-listed Sonoma sunshine (*Blennosperma bakeri*), Burke's goldfields (*Lasthenia burkei*), and Sebastopol meadowfoam (*Limnanthes vinculans*) and many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*) shall be conducted in accordance with the USFWS protocols developed for federally-listed plants on the Santa Rosa Plain: *Guidelines and Reporting Botanical Inventories for Federally Listed Plants on the Santa Rosa Plain* (USFWS 1996). The project botanist shall report special-status plant occurrences to the CNDDDB for inclusion in the database.
- Where project activities result in impacts to vernal pool habitats, the conservation and compensatory mitigation measures described in the *Santa Rosa Plain Conservation Strategy* (USFWS 2005) and the *Programmatic Biological Opinion...on the Santa Rosa Plain* (2007), or any subsequent guidance approved by USFWS, shall be implemented.
- If listed plant species are found on the project site, then the City shall prepare a mitigation plan that describes the avoidance or compensatory mitigation measures that would be implemented for these populations. As a performance standard, the plan shall provide for no net loss in the quantity or quality of plant populations. The mitigation plan would be submitted to the USFWS and/or CDFG for approval for federal and state-listed plants, respectively. The mitigation plan shall include the mitigation measures described below, or equally effective alternative measures.
- Mitigation for impacts to listed plants would first include avoidance measures when feasible and compensatory mitigation when avoidance is not possible. Avoidance measures may include redesigning the Project to include buffer zones to avoid impacting listed plants; and installing exclusion fencing around the existing plant populations prior to and during construction. Compensatory mitigation shall include replanting on site or propagation of plants at a nearby conservation site through seeding or translocation. Mitigation ratios shall be sufficient to achieve performance

criteria of no net loss of plants. Post-project monitoring shall verify that avoidance and mitigation measures are successful.

- If mitigation for impacts to listed or List 1B plants occurs at a non-bank site, preference would be given to locating the mitigation site in an area as close to the project site as possible. If mitigation sites are not available in the vicinity of the project site, mitigation for listed plants may be accomplished at any site in Sonoma County that is suitable and supports the impacted plant population.
- A long-term mitigation, monitoring, and management plan shall be developed for plant mitigation and submitted to the USFWS and/or CDFG for approval prior to initiation of construction activities. Mitigation sites shall be monitored for five years after installation. Depending on the actual case-by-case circumstances listed plants within the Project footprint may be salvaged and/or transplanted to a mitigation site approved by the CDFG and/or USFWS. Or seed from plants unavoidably impacted may 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 shall be limited to a maximum of 30 feet.
- Impacted plants shall be mitigated at the ratio of 2:1 (or as required by applicable resource agencies) for both individuals and area.
- All storage and staging areas shall be located outside of stands of listed plants.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
1.6. The Storage Component may convert public open space for uses not in accordance with restrictions on use of the open space.	Less than Significant
1.6. The Pump Station Components may convert public open space for uses not in accordance with restrictions on use of the open space	Less than Significant
8.1. The Storage and Pump Station Components may cause loss of individuals, or loss of critical habitat, or loss of occupied habitat of endangered, threatened, or rare species of plants and animals.	Less than Significant
8.1C. The SSP plus cumulative projects may cause loss of individuals, or loss of critical habitat, or loss of occupied habitat of endangered, threatened, or rare species of plants and animals.	Less than Significant

Alternatives: KF1, KF2, BF1, BF2, and AF

Implementing Agency: City of Santa Rosa

Timing: **Start:** Design measures – During component design.

Construction measures – At the start of construction

Complete: Construction measures – at completion of construction. Monitoring – five years after construction.

Monitoring Agency: City of Santa Rosa

Validation: Report that 90% plans conform with measure. Mitigation projects shall be monitored annually for five years using success criteria developed in coordination with the California Department of Fish and Game and the U.S. Fish and Wildlife Service.

3.3.12 Avoid Permanent Impacts to Sensitive Trees and Plant Communities

The City of Santa Rosa shall avoid permanent impacts to native special-status plant communities (as defined by CDFG) and protected trees (as defined by local tree ordinances), to the extent feasible. If permanent impacts cannot be avoided, protected trees and sensitive plant communities shall be replaced, restored, or preserved. Measures may include:

- Sensitive plant communities and protected trees (ordinance-sized trees and heritage trees) on the project site shall be mapped in the field prior to initiation of construction activities to determine the extent of impact to these resources. An arborist report shall be prepared for protected trees in accordance with the requirements of the City of Santa Rosa.
- If permanent impacts to protected trees or sensitive plant communities are found to occur in the project area and cannot be avoided, then the City shall develop a site-specific compensatory program for the affected resource. The compensatory program must be acceptable to the appropriate agency.
- Impacts to sensitive plant communities shall be mitigated using native plant material on a site approved by the local jurisdiction. Unavoidable impacts to sensitive plant communities shall be compensated for by preserving, creating, or restoring the affected community at an off-site location at a 2:1 ratio (i.e., 2 acres preserved for 1 acre impacted), or as required by applicable resources agencies. A mitigation and monitoring plan shall be developed for the mitigation site, be approved by the local jurisdiction, and include a five-year monitoring component.
- Local ordinances for each site shall be consulted to determine the species and size of protected trees.
- Protected trees, their protected dripline perimeters, and whether they are to be retained or removed shall be clearly shown on the construction plans.
- Before the start of any work on the site, trees designated for protection on the approved site plan shall be clearly delineated with a substantial barrier (e.g., orange construction fencing) at the protected dripline perimeter, or limits established during the permit process. The delineation markers shall remain in place for the duration of all work.
- When it is necessary to limb trees, prune branches, or prune roots within the right-of-way, work shall be conducted under the supervision of a certified arborist in accordance with accepted arboricultural practices, including the pruning standards published by the California Department of Forestry (Coast Region). This work shall occur only as a means of protecting trees from damage or removal.
- Where proposed facilities or construction activities must encroach upon the protected perimeter of a protected tree, special measures shall be instituted to minimize compaction. Tree wells or other techniques shall be used where advisable. No changes in existing ground level shall occur within the protected perimeter unless a drainage and aeration scheme approved by a certified arborist is utilized.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
1.6. The Storage Component may convert public open space for uses not in accordance with restrictions on use of the open space.	Less than Significant
1.6. The Storage and Pump Station Components may convert public open space for uses not in accordance with restrictions on use of the open space	Less than Significant
8.5. The Storage and Pump Station Components may cause permanent loss of native special-status plant communities, such as those designated in the California Natural Diversity Database as “rare” or in local tree ordinances.	Less than Significant
8.5C. The SSP plus cumulative projects may cause permanent loss of native special-status plant communities.	Less than Significant

Alternatives: KF1, KF2, BF1, BF2, and AF

Implementing Agency: City of Santa Rosa

Timing: **Start:** Design measures – During design.
 Construction measures – At the start of construction

Complete: Construction measures – at completion of construction. Monitoring – five years after construction.

Monitoring Agency: City of Santa Rosa

Validation: Report that 90% plans conform with measure.

Mitigation projects shall be monitored annually for five years using success criteria developed in coordination with the California Department of Fish and Game and the U.S. Fish and Wildlife Service.

3.3.13 Avoid Blocking Major Wildlife Migration or Movement Corridors

The City of Santa Rosa shall avoid blocking major wildlife migration or movement corridors, to the extent feasible. (In this section, “wildlife” is used in an inclusive way to include fish.) Preconstruction surveys and research of existing studied conducted by a qualified biologist shall identify major migration routes and movement corridors. Where impacts to migration or movement corridors cannot be avoided, the City shall compensate for these impacts through the implementation of one or more of the following measures:

- Construction and maintenance activities shall be timed to avoid disruption of seasonal migration or movement routes, if feasible. If not feasible, alternative routes shall be provided for movement through or around construction areas.
- Mitigation efforts shall provide an adequately sized, unobstructed corridor to natural open space that also provides habitat for the target species. These corridors shall allow movement between the mitigation area and the occupied habitat.
- Only those structures and barriers essential to the construction activity occurring within the corridor shall be placed within movement corridors. Non-essential materials and equipment shall be stored outside the movement corridor. Staging areas shall be established outside movement corridors.
- Twenty-four hour operations shall be avoided within movement corridors. Night-lighting within movement corridors shall be avoided.
- All temporary barriers to wildlife movement shall be left in place for the minimum amount of time necessary to construct the Project.
- Operational impacts of storage ponds that intersect a movement corridor for California tiger salamanders shall be avoided by construction of an impassable barrier shunt on the storage pond embankment. The barrier shunt would be designed to prevent salamanders from entering the storage ponds and would redirect salamanders around the constructed feature. The barrier shunt design shall be submitted for review and approval by the USFWS. The barrier shunt would likely take the form of an approximately 12-inch-high vertical curb, which the salamanders would be unable to climb over but which would direct them around the storage pond.
- No pets shall be allowed on the project site with the exception of service animals. In particular, dogs may inhibit the use of corridors by native wildlife and may prey on or harass native wildlife moving through the corridor.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
1.6. The Storage Component may convert public open space for uses not in accordance with restrictions on use of the open space.	Less than Significant
1.6. The Pump Station Components may convert public open space for uses not in accordance with restrictions on use of the open space	Less than Significant

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
8.6. The Storage Component may substantially block or disrupt major migration or travel corridors between essential resource areas for native.	Less than Significant – KF1, KF2
8.6C. The SSP plus cumulative projects may substantially block or disrupt major migration or travel corridors between essential resource areas for native animals.	Less than Significant – KF1, KF2

Alternatives: KF1, KF2, BF1, BF2, and AF

Implementing Agency: City of Santa Rosa

Timing: **Start:** At the beginning of design.

Complete: At completion of construction.

Monitoring Agency: City of Santa Rosa

Validation: Report that 90% plans conform with measure.

3.3.14 Avoid Loss of Aquatic Habitat due to Storage Reservoirs

The City shall avoid loss of aquatic habitat due to storage ponds. Pre-construction aquatic surveys shall be conducted to determine whether any listed or special-status aquatic species occupy the stream habitat potentially affected by decreased streamflow downstream from a dam site. Linear feet or acreage of downstream habitat potentially affected by decreased streamflow shall be determined by hydrological studies. Where impacts to aquatic habitat may occur, the City shall compensate for these impacts through the implementation of one or more of the following measures:

- Natural streamflow may be diverted around each reservoir.

New habitat suitable for the species affected may be created or existing, degraded habitat for the species may be restored.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
1.6. The Storage Component may convert public open space for uses not in accordance with restrictions on use of the open space.	Less than Significant
1.6. The Pump Station Components may convert public open space for uses not in accordance with restrictions on use of the open space	Less than Significant
8.8. The Storage Component may cause a decrease in stream flows, affecting aquatic habitat or aquatic life downstream from proposed dam Sites.	Less than Significant - AF
8.8C. The SSP plus cumulative projects may cause a decrease in stream flows, affecting aquatic habitat or aquatic life downstream from the proposed reservoir Site.	Less than Significant - AF

Alternatives: KF1, KF2, BF1, BF2, and AF

Implementing Agency: City of Santa Rosa,

Timing: **Start:** Design measures – During design.
 Construction measures – At the start of construction

Complete: Construction measures – at completion of Monitoring – five years after construction.

Monitoring Agency: City of Santa Rosa

Validation: Report that 90% plans conform with measure.

Mitigation projects shall be monitored annually for five years using success criteria developed in coordination with the California Department of Fish and Game and the U.S. Fish and Wildlife Service.

3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands

The City of Santa Rosa shall avoid fill of jurisdictional waters and wetlands, to the extent feasible. Preconstruction surveys shall identify waters and wetlands according to state and federal regulations.

For jack and bore activities, the City shall implement the following measures:

- Set-up activities for jack and boring operations shall be situated outside of wetlands and riparian areas.
- At the conclusion of jack and bore operations and installation of transmission line, bore pits shall be backfilled, and returned to pre-project conditions.
- At the completion of daily boring operations, the bore pits shall be covered to prevent wildlife from falling in. Every morning and periodically during the course of the workday, the bore pits will be inspected for any trapped wildlife prior to commencing boring operations.
- If any wildlife becomes trapped, the City's biological monitor shall be notified immediately and shall remove any trapped animals and release them away from boring operations.
- If the entrapped animals appear to be special-status species, CDFG will be contacted immediately for identification and to identify a course of action. CDFG will be informed if any special-status species are found.
- If a frac-out or spill occurs, the City shall implement the following measures:
 - Notify CDFG immediately.
 - Begin containment and clean up measures immediately. Where water flows allow, construct a sandbag well around the frac-out or place a standing pipe around the frac-out to contain the drilling mud. A trailer mounted vacuum or vacuum truck shall be deployed to vacuum out spilled drilling fluids that continue to leak. Removed drilling fluids shall not be placed where they are likely to re-enter the stream.

If fill cannot be avoided, the City shall compensate for these impacts by creation, restoration, or preservation of wetlands and other waters so there is no net loss. Measures may include:

- Removal of sediments and foreign materials deposited by construction activities from jurisdictional waters.
- Restoration of disturbed waters, wetlands, or stream gradients to original contour and hydrologic condition.
- Banks stabilization prior to the onset of winter using straw, matting, wattles, or other suitable means. Use of concrete, rip-rap, and other hard surface cover is discouraged.
- Reestablishment of riparian woodland and stands of sensitive status wetland plant cover using native seed stock, container plants, and/or cuttings collected from as close to the impact vicinity as possible.

- Protection and conservation of topsoil within riparian woodland and stands of sensitive status wetland plant cover.
- Creation of compensatory acreage to mitigate permanent impacts. Compensatory wetlands or other waters shall be in-kind, if practicable and, if feasible, compensatory wetlands or other waters shall be located within the same watershed as the impacted waters. Mitigation efforts may be consolidated in one or more compensatory waters/wetland mitigation projects. Out-of-kind compensatory wetlands or other waters, if constructed, shall provide equal or greater wetland function and value than impacted waters.

Wetland creation shall be monitored for a minimum of 2 years for hydrological functions and restoration of herbaceous wetlands, and for a minimum of 5 years for the restoration of adjacent woody riparian areas. If restoration objectives are not achieved within the monitoring period, restoration activities shall continue until performance standards are met. Restoration performance standards shall be the same as those cited above for temporary impacts.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
9.1 and 9.2. The Storage Component may fill or alter wetlands or other waters of the U.S. or of the State of California or alter the bed and banks of a jurisdictional water.	Less than Significant
9.1 and 9.2. The Pump Station Component may fill or alter wetlands or other waters of the U.S. or of the State of California or alter the bed and banks of a jurisdictional water.	Less than Significant

Alternatives: KF1, KF2, BF1, BF2, and AF

Implementing Agency: City of Santa Rosa

Timing: **Start:** At onset of design.

Complete: Construction measures – at completion of construction. Monitoring – five years after construction.

Monitoring Agency: City of Santa Rosa

Validation: Mitigation and revegetation success shall be monitored annually for five years using success criteria developed in coordination with the California Department of Fish and Game, appropriate Regional Water Quality Control Board(s), and the U.S. Army Corps of Engineers.

3.3.17 Evaluate and Mitigate Impacts to Cultural Resources, Paleontological Resources, and Human Remains

The City of Santa Rosa shall avoid impacts to cultural resources, human remains (including human remains, associated grave goods and items of cultural patrimony), and paleontological resources to the extent feasible. Any cultural resources, human remains, and paleontological resources to be affected by the Project shall be addressed under applicable cultural resource and health and safety laws and regulations. Consultation to address potential adverse effects to cultural resources may involve interested parties, and any additional state or federal agencies which assert jurisdiction over the Project. Consultation to address potential adverse effects to human remains would involve descendent communities.

Cultural Resources

A four-step process would be implemented to address potential impacts to unrecorded cultural resources discovered during construction, as well as resources that may exist in the sensitive areas identified at alternative sites KF1 and KF2 and BF2. The four-step process conforms to the requirements of pertinent cultural resource laws and regulations. The identification phase of the process (normally referred to as the first step) has already been conducted for SSP and is not described here.

- The first step requires that cultural resources monitoring be conducted in those sensitive areas that may contain archaeological deposits as indicated by the field survey (i.e., the concentrations of historical and prehistoric archaeological materials at alternative sites KF1, KF2, and BF2). The monitoring would identify and avoid adverse impacts to unrecorded archaeological deposits that may exist in these areas. The cultural resources monitor must be empowered to temporarily halt construction in the immediate vicinity of the find to protect the find until it can be evaluated.
- The second step requires that ground disturbing activities be halted in a 25-foot radius around the location of possible archaeological deposits discovered during construction. This step would apply in those portions of the project area not subject to cultural resources monitoring. No project personnel shall touch or collect any such materials.
- The third step requires that a professional archaeologist evaluate the significance of archaeological deposits that are either identified during cultural resources monitoring (step one) or encountered during unmonitored project activities (step two). The evaluation would be conducted in accordance with the significance criteria presented in Table 4.13-2. If the find is significant, the evaluating archaeologist would determine whether it would be affected by the proposed project. Non-significant finds would not be given further protection. A report describing the methods and results of the evaluation shall be submitted to the Northwest Information Center (NWIC) of the California Historical Resources Information Center.

- The fourth step requires mitigation of any adverse effects to significant resources that would be affected by the project. A mitigation plan shall be developed and implemented based on the recommendations of the evaluating archaeologist. Mitigation may include, but is not limited to, data recovery excavation, consultation with descendent communities, site recording, and site capping. A report describing the methods and results of the selected mitigation option shall be submitted to the NWIC.

Human Remains

A three-step process would be implemented to address potential impacts to human remains. For the purposes of this measure, these treatments apply to human remains, including those interred outside of formal cemeteries; and human remains, associated grave goods, and items of cultural patrimony. The identification phase of the process (normally referred to as the first step) has already been conducted for SSP and is not described here.

- The first step requires that ground disturbing activities be halted in a 25-foot radius around the location of possible human remains discovered during construction. No project personnel shall touch, collect, or photograph any such remains.
- The second step requires that a professional archaeologist (with sufficient background in human osteology) be contacted to identify whether the remains are human or other animal. If the remains are human, the Sonoma County Coroner shall be contacted in compliance with California Health and Safety Code Section 7050.5. If the remains are further identified as being of Native American origin, the Native American Heritage Commission shall be contacted, and the requirements of Section 7050.5 shall be met (e.g., assigning a Most Likely Descendent (MLD), eliciting recommendations from that assignee about the treatment and disposition of the remains, etc.).
- The third step requires that the evaluating archaeologist, in consultation with the MLD, prepare a report documenting the methods and results of his or her assessment, and provide recommendations regarding the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report shall be submitted to the NWIC.

Paleontological Resources

A two-step process would be implemented to address potential impacts to paleontological resources discovered during construction.

- The first step requires that if paleontological resources are identified during construction, ground disturbing activities be halted in a 25-foot radius around the location of the find. A professional paleontologist would evaluate the significance of the find. The evaluation would be conducted in accordance with

the significance criteria presented in Table 4.13-2. Non-significant finds would not be given further protection.

- The second step requires mitigation of any adverse effects to significant paleontological resources. Mitigation shall include specimen field recovery or documentation, and accessioning at a suitable paleontological repository.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
13.1, 13.2, 13.1C, & 13.2C. The Storage and Pump Station Component may cause a substantial adverse change in the significance of a historical or unique archaeological resource or an adverse effect on a historic property which is included in, or eligible for inclusion in, the National Register of Historic Places.	Less than Significant
13.3, 13.4, 13.3C, & 13.4C. The Storage and Pump Station Component may disturb human remains or associated grave goods, or items of cultural patrimony	Significant
13.5 & 13.5C. The Storage and Pump Station Components may directly or indirectly destroy a unique paleontological resource or Site.	Less than Significant

Alternative: KF1, KF2, BF1, BF2, and AF

Implementing Agency: City of Santa Rosa

Timing: **Start:** At onset of design.

Complete: Before commencement of Project construction.

Monitoring Agency: City of Santa Rosa

Validation: Implementation of mitigation/treatment plan prior to construction.

3.3.18 Minimize Temporary and Permanent Visual Impacts

The City shall minimize temporary and permanent visual impacts to designated scenic resources and viewsheds from private residences, high volume travelways, recreation or other public use areas, to the extent feasible.

The City shall avoid or substantially lessen impacts by reducing construction disturbance, refining the siting of facilities or using design features to decrease visual contrast. Measures may include:

- The size of construction zones and staging areas may be the minimum operable size. The location of such zones shall be adjusted to minimize the visual impacts.
- Alignments and locations of facilities may be adjusted to avoid visually sensitive features and conditions that would result in major landform alteration or mature landscape removal. Visually sensitive features may include significant stands of oaks and other mature trees, visually significant rock outcroppings, highly visible steep slopes, and highly visible roadside foreground areas.
- Utilize local rock types for road and pad surfacing material to minimize color contrast between engineered and natural land forms; and provide for painting above ground pipelines, pump stations, control buildings, noise barriers and accessory structures a dark, natural color.
- Pump stations that cannot be sited to avoid view obstruction from adjacent sensitive viewpoints, shall be placed at grade, where feasible.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
1.6. The Storage Component may convert public open space for uses not in accordance with restrictions on use of the open space.	Less than Significant
1.6. The Pump Station Components may convert public open space for uses not in accordance with restrictions on use of the open space	Less than Significant
14.1 & 14.2. The Storage Component may have a substantial adverse effect on scenic vistas, substantially damage scenic resources, or substantially degrade the existing character of the site.	Significant – KF1 and KF2 Less than Significant – BF1, BF2, AF
14.1 & 14.2. The Pump Station Component may have a substantial adverse effect on scenic vistas, substantially damage scenic resources, or substantially degrade the existing character of the Site.	Significant – AF Less than Significant – KF1, KF2, BF1, BF2
14.1C & 14.2C. The SSP and cumulative projects could impact visual resources based on evaluation criteria 1 and 2.	Significant

Alternatives: KF1, KF2, BF1, BF2, and AF

Implementing Agency: City of Santa Rosa

Timing: **Start:** During final design.
Complete: At the completion of final design.

Monitoring Agency: City of Santa Rosa

Validation: Report on 90% plans to confirm consistency with measure.

3.3.19 Compatibility of Pond Design and Trails Plan

- The City shall amend the design of BF1 (if the Sonoma County Agricultural Preservation and Open Space District doesn't amend the Laguna de Santa Rosa Protected Lands Trails Plan) to make the BF1 pond design compatible with the plans for the trail staging area.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
1.4. The Storage Component may increase the potential for conflict as a result of incompatible land use.	BF1- Less than Significant

Alternatives: BF1

Implementing Agency: City of Santa Rosa

Timing: **Start:** During final design
Complete: At the completion of final design.

Monitoring Agency: City of Santa Rosa

Validation: Report on 90% plans to confirm consistency with measure.

3.4 CONSTRUCTION MEASURES

This section contains mitigation measures to be implemented prior to, during, and immediately following construction. These measures generally require certain constraints during construction and to repair and rehabilitate impacts resulting from construction of the Project.

3.4.1 Protect Active Raptor Nests

The City of Santa Rosa shall avoid loss of active raptor nests.

Preconstruction surveys shall be conducted by a qualified biologist no more than 30 days prior to the initiation of project activities including but not limited to tree trimming, grading, and excavation. Surveys shall be repeated at 30-day intervals if construction has not been initiated onsite during the previous 30 days. During the preconstruction surveys a qualified wildlife biologist shall locate and map active nests on the project site or within 500 feet of the site. Preconstruction surveys shall be conducted in all suitable habitats within 500 feet of the site during the nesting season (February – August).

If active raptor nests are located within a project site, measures to avoid impacts shall include one or more of the following, depending upon site-specific conditions:

- Construction activities shall be delayed until the end of the nesting season or until the young have fledged. A qualified biologist shall monitor the nest to determine when the young have fledged.
- If active nests are observed within 300 feet of the project site, exclusion zones shall be designated as described herein. No construction activities shall be allowed within the exclusion zone until the following conditions have been met: a) the young have fledged from the nest, b) the birds abandon the nest on their own, c) the nest fails and the birds do not re-nest. A qualified biologist shall determine if and when these conditions are met. Exclusion zones shall be established as follows:
- Nests Located along Public Road Shoulders, Public Parking Lots, or Occupied Commercial or Residential Buildings. An exclusion zone of 50-100 feet shall be established around nest trees located along public road shoulders, public parking lots, or adjacent to occupied commercial or residential buildings within or immediately adjacent to the construction corridor. The exclusion zone distance shall be determined by a qualified biologist in consultation with CDFG. The exclusion zone shall be established using orange construction fencing. No construction activities or staging shall be allowed within the exclusion zone until the young have left the nest and are foraging independently. Normal road traffic and construction traffic shall be allowed within the exclusion zone if the exclusion zone overlaps the public roadway. Parking or stopping will not be allowed within the exclusion zones. Monitoring of roadside nest sites will not be required.
- Nests Located in Open Country. Exclusion zones shall be established of 100-300 feet from the nest tree around any active raptor nest in open country. The exclusion zone distance shall be determined by a qualified biologist in consultation with CDFG. Where exclusion zones intersect county roads or state/federal highways, normal road and construction traffic shall be allowed. Only the portion of the exclusion zone that intersects the project site shall be fenced using orange construction fencing.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
1.6. The Storage Component may convert public open space for uses not in accordance with restrictions on use of the open space.	Less than Significant
1.6. The Pump Station Component may convert public open space for uses not in accordance with restrictions on use of the open space	Less than Significant
8.3. The Storage and Pump Station Components may cause loss of active raptor nest sites.	Less than Significant
8.3C. The SSP plus cumulative projects may cause loss of active raptor nest Sites.	Less than Significant

Alternatives: KF1, KF2, BF1, BF2, and AF

Implementing Agency: City of Santa Rosa

Timing: **Start:** 30 days prior to the start of construction, during each construction year.

Complete: Monitoring shall be complete when the last young raptor has fledged, during each construction year.

Monitoring Agency: City of Santa Rosa

Validation: During the breeding season of each construction year, reports shall be submitted to the California Department of Fish and Game and the City of Santa Rosa.

3.4.2 Avoid Loss of Fully Protected Species, Federal Candidate Species, and Species of Special Concern

The City of Santa Rosa shall avoid loss of individuals of fully protected species. The City shall avoid, to the extent practicable, loss of individuals or habitat for animals designated as federal candidate species, and California species of special concern.

Prior to initiation of project activities that may result in loss of individual animals or loss of their habitat, surveys to determine the presence or absence of these species shall be conducted. Surveys shall be conducted in the appropriate season by qualified biologists using standard survey techniques. For species for which an agency protocol exists, that protocol should be used for the survey. If candidate species or species of special concern are not found during the species-specific surveys, then no mitigation shall be required.

If candidate species or species of special concern are found to occur on the project site, measures may include:

- Redesign or reconfigure the project to avoid or minimize the extent of habitat impacted by the project when feasible.
- Limit habitat disturbance to the minimum amount necessary to complete the project. Corridors width shall be limited to the minimum width such that construction can feasibly be completed quickly to minimize impact.
- Storage and staging areas shall be located outside the habitat for candidate species or species of special concern.
- For federal candidate bird species or bird species of special concern, construction activities (including tree trimming and vegetation clearing) shall be timed, when feasible, to avoid the breeding season of species found within the project area. An exclusion zone shall be established around all active nests for federal candidate species or species of special concern and maintained until the nest is abandoned naturally or until the young have fledged. The size of the exclusion zone shall be determined by a qualified biologist in consultation with CDFG.
- For stream crossings where aquatic federal candidate species or species of special concern are present and the stream is flowing, the Project shall use cofferdams to divert stream flow from the construction area. A cofferdam may be constructed above the crossing site, with diversion of the flow through a pipe. Use of the cofferdam is designed to temporarily exclude special-status species from the construction area.
- An exclusion zone of 100 feet shall be established around a structure occupied by roosting bats during construction activities, where practical. If the roost site is used seasonally, Project activities shall be timed, to the extent practicable, for the period when the roost is not being used. All construction activity in the vicinity of an active roost shall be limited to daylight hours. Lights may be restricted around roost sites at night.

- Equipment maintenance and fueling areas within 200 feet of an aquatic sites. Fueling shall be behind a containment barrier that would prevent any spilled or leaked fuel from entering the aquatic site. Servicing of mobile equipment shall be limited to within designated areas away from sensitive habitats. Motorized equipment used during construction or demolition activities shall be checked for oil, fuel, and coolant leaks prior to initiating work. Any equipment found to be leaking fluids shall not be used in or within 200 feet of aquatic habitat features to minimize the chances of contaminating the habitat.
- An erosion control plan and emergency response and cleanup plan shall be prepared prior to beginning work adjacent to streams. The plan shall detail the methods to contain sediment runoff into the creek and to contain and cleanup spills of petroleum products or other hazardous materials in the work area.
- All construction personnel shall receive environmental training about the sensitive nature of special-status species in the project area. This training shall include a description of the species, comparison of the species to other similar species, life history, and a description of project measures in place to protect the species.
- If avoidance is infeasible, permanent impacts to species of special concern or federal species shall be compensated for by relocation of individuals or creation, restoration or preservation of habitat. Measures shall include:
 - If a bat roost site is removed, demolition shall be timed for the period when bats are not present on the site. An artificial roost may be constructed and installed within the general vicinity of the existing roost site prior to demolition of the existing roost. Materials from the existing roost should be incorporated into the artificial roost. Removal of roosts of special-status bats shall be coordinated with CDFG.
- Creation, restoration or preservation of habitat such that there is no net loss of habitat, in terms of both quality and quantity, for the special-status species.
- Temporarily impacted habitat occupied by special-status species shall be restored to approximate pre-project conditions upon project completion.
- The amount of riparian vegetation trimmed, removed, or disturbed shall be kept to a minimum. Severely trimmed or removed vegetation shall be replaced at a 1:1 ratio in place or at a 2:1 ratio (or as required by applicable resource agencies) elsewhere within the watershed where these species historically occurred and where the likelihood of reestablishing populations is greatest. Restoration shall be accomplished using native vegetation.
- Tree trimming and removal shall be limited to the minimum number of trees possible. Tree trimming shall be done according to arborist guidelines to minimize the effects to trees. Trimming of trees shall not jeopardize the survival of trees.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
1.6. The Storage Component may convert public open space for uses not in accordance with restrictions on use of the open space.	Less than Significant
1.6. The Pump Station Component may convert public open space for uses not in accordance with restrictions on use of the open space	Less than Significant
8.4. The Storage and Pump Station Components may cause loss of animals designated as a federal candidate species, a California fully protected species, or a California species of special concern.	Less than Significant
8.4C. The SSP plus cumulative projects may cause loss of animals designated as a federal candidate species, a California fully protected species, or a California species of special concern.	Less than Significant

Alternatives: KF1, KF2, BF1, BF2, and AF

Implementing Agency: City of Santa Rosa

Timing: **Start:** Design measures – during design. Construction measures – at the start of construction.

Complete: At the completion of construction.

Monitoring Agency: City of Santa Rosa,

Validation: The City shall review 90% plans to verify that appropriate setbacks and buffers have been established to protect species.

3.4.3 Construction Noise Control Measures

The City of Santa Rosa shall ensure that noise disturbances at sensitive receptors during construction activities are reduced per the applicable jurisdiction's noise ordinance, to the extent feasible. Measures may include:

- Newer equipment with improved noise muffling shall be used and equipment items shall have the manufacturers' recommended noise abatement measures, such as mufflers, engine covers, and engine vibration isolators intact and operational.
- Construction equipment shall be inspected weekly to ensure proper maintenance and presence of applicable noise control devices (e.g., mufflers and shrouding, etc.).
- Where possible, hydraulic tools shall be used instead of pneumatic impact tools.
- Construction activities after 7:00 p.m. or before 7:00 a.m. shall not be allowed within 4,500 feet of residential units, hotels, hospitals, or convalescent homes, or noise shall be monitored on site, and construction activities limited, to ensure that noise levels do not exceed 60 dBA L₁₅ (i.e., noise levels to be managed over a 15 minute period) at the sensitive receptor.
- Heavy truck trips shall be routed over streets that will cause the least noise disturbance to residences or businesses in the vicinity of the Project site, when feasible.
- Construction staging areas, maintenance yards, and other construction-oriented operations shall be avoided within 1,600 feet of a sensitive receptor, or noise shall be monitored on site, and staging activities limited, to ensure that noise levels do not exceed 60 dBA L₁₅ at the sensitive receptor.
- Sensitive noise receptors shall be specifically identified and notified in advance to keep windows and doors closed during peak construction activity. Sensitive noise receptors shall be notified when blasting will be conducted and instructed as to actions necessary to reduce noise impacts.
- Where construction would occur within 1,600 feet of schools, the construction manager shall, as necessary, implement measures to insure that construction noise does not interfere with the learning activity of the students. The following noise control measures, or equally effective alternative measures, shall be implemented as necessary:
 - Limit construction to non-school hours or weekends.
 - Utilize temporary noise barriers, as needed, to protect schools from excessive noise levels from construction activities. Noise barriers shall be made of heavy plywood, loaded vinyl acoustical curtain (Sound Transmission Coefficient rating of 25 or better), or natural and temporary earth berms.
 - A qualified noise control engineer shall design the temporary construction noise barriers used.

- A qualified noise control engineer shall monitor the temporary construction barriers used, to ensure that any gaps or inadequate materials do not increase noise impact by channeling, or fail to result in any noise mitigation.
- The construction manager shall monitor blasting noise to ensure that the size of the explosive charge is limited such that the scaled distance is 60 ft/lb² or greater, as recommended by the U.S. Bureau of Mines. This is accomplished by using millisecond delays and multiple charges where scaled distances would otherwise be less than 60 ft/lb².
 - Limit blasting to daylight hours.
 - Blasting shall not be conducted at more than one location at a time.
 - Use adequate depth of overburden and proper stemming to minimize blast overpressures.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
12.1 Construction of the storage component may generate noise levels in excess of standards	Significant
12.1 Construction of the pump station component may generate noise levels in excess of standards	Significant - AF
12.2 Storage component construction may result in generation of excessive ground-borne vibration levels.	Less than Significant
12.4 Construction activities and traffic required for the storage component may result in a substantial temporary increase in ambient noise levels.	Significant - AF
12.1C. Construction of the SSP and cumulative projects could generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	Significant
12.4C. Construction activities and traffic required for the SSP and cumulative projects could result in a substantial temporary or periodic increase in ambient noise levels above existing levels in the vicinity.	Significant

Alternatives: KF1, KF2, BF1, BF2, and AF

Implementing Agency: City of Santa Rosa

Timing: **Start:** During Construction

Complete: At the completion of construction.

Monitoring Agency: City of Santa Rosa

Validation: The City shall respond to complaints from private citizens regarding construction noise within 24 hours. Construction noise shall be monitored at the nearest noise-sensitive receptor locations(s) outside the Project boundaries, during high noise generating activity to determine compliance with local noise criteria. Blasting noise shall be monitored for all blasts. If monitoring indicates that construction noise is in excess of applicable standards, the City may consider implementing additional measures to abate noise.

3.4.4 Landscape and Architectural Screening

The City of Santa Rosa shall plant drought tolerant, non-invasive shrubs and trees and/or utilize raised berms at facilities as appropriate to screen views from sensitive viewpoints (scenic vistas, designated local or State scenic resources, private residences, high volume travelways, recreation use areas, or other public use area) and to reduce visual contrast in off-site foreground views. Screening may also take the form of architectural remedies such as designing a pump station to appear as a structure that would blend with the surrounding neighborhood.

Where sites may be viewed from residences, the City shall coordinate with landowners in close proximity to the project to provide vegetation screening on the residential property. All visible faces of storage facility dams or berms shall be revegetated with drought tolerant, non-invasive grasses and where appropriate natural groupings of shrubs shall be planted adjacent to the dams or berms to reduce the visual contrast of the exposed face compared to the surrounding landscape.

To minimize color contrast between engineered and natural land forms, local rock types for road and pad surfacing material shall be used, where feasible, and above ground facilities, control buildings, noise barriers and accessory structures shall be painted a dark, natural color.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance After Mitigation
1.6. The Storage Component may convert public open space for uses not in accordance with restrictions on use of the open space.	Less than Significant
1.6. The Pump Station Component may convert public open space for uses not in accordance with restrictions on use of the open space	Less than Significant
14.1 & 14.2. The Storage Component may have a substantial adverse effect on scenic vistas, substantially damage scenic resources, or substantially degrade the existing character of the site.	Significant – KF1, KF2 Less than Significant – BF1, BF2, AF
14.1 & 14.2. The Pump Station Component may have a substantial adverse effect on scenic vistas, substantially damage scenic resources, or substantially degrade the existing character of the site.	Significant – AF Less than Significant – KF1, KF2, BF1, BF2
14.1C & 14.2C. The SSP and cumulative projects could impact visual resources based on evaluation criteria 1 and 2.	Significant

Alternatives: KF1, KF2, BF1, BF2, and AF

Implementing Agency: City of Santa Rosa

Timing: **Start:** During construction.

Complete: Within one year of completing construction of an IRWP facility.

Monitoring Agency: City of Santa Rosa

Validation: The City shall verify that landscaping is included in plans, and shall monitor success of landscaping for five years after completing construction of an SSP facility.

3.4.5 Invasive Plant Species

The City of Santa Rosa shall:

- Map invasive, non-native plants (not including grasses) on the project site prior to initiation of construction activities.
- Remove from the site and bag any invasive weeds that are cut or uprooted as part of site preparation or construction. Dispose of at an appropriate disposal facility. Do not mulch or spread invasive weeds.
- A qualified botanist shall monitor areas for two years post-construction. If the significance thresholds have been exceeded during the monitoring period, the Project shall take remedial actions to control the weeds. Control shall be understood as not necessarily requiring eradication.
- As a performance standard, the remedial action shall ensure that, at the end of the two-year period, invasive weed conditions are reduced such that they are no worse than they were prior to the initiation of construction activities.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance After Mitigation
1.6. The Storage Component may convert public open space for uses not in accordance with restrictions on use of the open space.	Less than Significant
1.6. The Pump Station Component may convert public open space for uses not in accordance with restrictions on use of the open space	Less than Significant
8.9. The Storage and Pump Station Components may result in the introduction of a new invasive plant species or the stimulation of an existing invasive plant species	Less than Significant
8.9C. The SSP plus cumulative projects may result in the introduction of a new invasive plant species or the stimulation of an existing invasive plant species.	Less than Significant

Alternatives: KF1, KF2, BF1, BF2, and AF

Implementing Agency: City of Santa Rosa

Timing: **Start:** Prior to construction.

Complete: At termination of construction

Monitoring Agency: City of Santa Rosa

Validation:

Monitoring 2 years after completion of construction for performance standard listed in measure.

3.5 OPERATION AND MAINTENANCE MEASURES

This section contains mitigation measures to be implemented during operation of the IRWP. These measures generally require monitoring of system operations over time and the modification of those operations to reduce adverse environmental impacts.

The following operation and maintenance measures were included in the Program EIR but are not necessary for the Seasonal Storage Project:

- 3.5.1 Monitor Seismic Events and Adjust Injection Rates
- 3.5.3 Adjust pH and Dissolved Oxygen in Recycled Water Prior to Discharge
- 3.5.4 Reduce Nitrogen Loads to the Laguna de Santa Rosa
- 3.5.5 Provide Riparian Habitat in Russian River Watershed
- 3.5.6 Dam Seepage Interception
- 3.5.7 Laguna Biostimulation Reduction
- 3.5.8 Corrosion Control
- 3.5.9 Odor Control from Grape Harvesting and Crushing Operations
- 3.5.10 through 3.5.18 and 3.5.20 are mitigations developed for the Discharge Compliance Project. They are not needed for the Seasonal Storage Project.

3.5.2 Septic System Replacement

The City shall ensure that facilities do not adversely affect septic system operation or environmental health and safety, particularly those sites where hydrogeologic reports identify impermeable soil horizons near the surface. If monitoring indicates that a pond has adversely affected septic system operation or environmental health and safety, then systems shall be replaced with a different type of system, such as a mound system, that can operate effectively in shallow groundwater conditions.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance After Mitigation
5.2. The Storage Component may cause groundwater mounding or increase groundwater levels that cause surface water discharge in a non-stream environment.	Less than Significant – BF1, BF2, AF

- Alternatives:** BF1, BF2, AF
- Implementing Agency:** City of Santa Rosa
- Timing:** **Start:** Prior to construction of storage ponds and created wetlands
Complete: Ongoing
- Monitoring Agency:** City of Santa Rosa
- Validation:** Groundwater monitoring shall be conducted quarterly throughout the life of the project

3.5.19 Avoid Greenhouse Gas Emissions and Implement Emission Reduction Program

The City shall avoid greenhouse gas emissions from the SSP to the extent feasible. To the extent that greenhouse gas emissions of the project remain, the City shall implement programs to compensate for the project's greenhouse gas emissions. One of the following performance standards shall be met, to the extent feasible:

- Greenhouse gas emissions of the project shall be compensated for by developing, adopting, and implementing the local action plans for the governmental activities of each of the Subregional Partners and meeting their established goals;
- Greenhouse gas emissions for the project shall be compensated for by reductions in emissions from other activities of the Subregional Partners such that no net increase in eCO₂ emissions shall occur.

In either case, compensatory emission reduction programs would be implemented as project-related eCO₂ emissions increase. This increase in emissions will occur as the project is implemented. Thus, the increase in eCO₂ emissions occurring as the project is implemented would be calculated and tracked, to ensure that offsetting reductions in such emissions would occur along the same timeline.

The following are examples of feasible compensatory programs to reach either of the performance standards above:

- Installation of solar systems or other renewable energy
- Purchase of green electricity
- Increased cogeneration at the Laguna Plant from implementation of the manure management option of the Nutrient Offset Program.

SB 97 directs the Resources Agency to adopt regulations addressing greenhouse gas emissions. In light of this statutory requirement, the following measure establishes an additional option that could be implemented in lieu of the above measures:

- In the event the Resources Agency adopts guidance regarding determining the significance of eCO₂ emissions, and mitigating such emissions, comply with the Resources Agency regulations.

IMPACTS MITIGATED AND MITIGATION LEVEL

Impacts Mitigated	Level of Significance after Mitigation
11.6. The Pump Station component may increase greenhouse gas emissions.	Significant
11.6C. The SSP plus cumulative projects may increase greenhouse gas emissions.	Significant

Alternatives: KF1, KF2, BF1, BF2, and AF

Implementing Agency: City of Santa Rosa

Timing: **Start:** From onset of increases in discharge or from onset of operation of new facilities

Complete: Ongoing during discharge.

Monitoring Agency: City of Santa Rosa

Validation: Monitoring of energy use/eCO₂ by the increased discharge or new facility and comparing that to the offset of energy/eCO₂ as described in the measure above.