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STAFF REPORT: REGULAR CALENDAR

Application No.:	**1-17-0200**
Applicant:	**Loleta Community Services District**
Agent:	SHN Consulting Engineers & Geologists, Inc.
Location:	The Loleta Wastewater Treatment Facility at 2656 Eel River Drive and surrounding agricultural lands extending southwest of the intersection of Eel River Drive and Cannibal Island Road to the Eel River, southeast of Duncan Road, Loleta, Humboldt County (APNs 309-211-006, 309-211-007, 309-211-002, 309-251-002 and 309-191-012).
Project Description:	Improve Loleta's wastewater treatment system to meet discharge requirements by: (1) upgrading the existing wastewater treatment facility with a new influent pump station, pre-screening rotary drum screen, extended aeration secondary treatment, and ultraviolet disinfection system; (2) repairing an existing subsurface pipeline that discharges treated wastewater to a wetland tributary of the Eel River; and (3) installing a new land application system for irrigation of agricultural land with treated wastewater.
Staff Recommendation:	Approval with conditions.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends that the Commission approve with conditions the proposed repairs and improvements to the existing wastewater treatment system for the approximately 780-person unincorporated community of Loleta in Humboldt County. The proposed project consists of three components: (1) upgrades to the existing wastewater treatment facility (WWTF); (2) repair of an existing subsurface discharge pipeline that carries treated wastewater from the WWTF under agricultural fields to a wetland tributary of the Eel River; and (3) installation of a new land application system for irrigation of approximately 47 acres of agricultural land with treated wastewater. The purpose of the proposed project is to improve wastewater treatment and modify how treated wastewater is discharged in order to meet current National Pollutant Discharge Elimination System (NPDES) permit requirements. The proposed project will not alter the geographic limits of the Loleta Community Service District's service area or increase service capacity.

Currently, the WWTF discharges treated wastewater year-round to a wetland tributary of the Eel River in violation of the Applicant's NDPES permit which prohibits discharges of treated wastewater to the Eel River and its tributaries during the dry season. The proposed new land application system would allow the Applicant to use treated wastewater to irrigate pasture land during times when discharge to the wetland tributary of the Eel River is prohibited.

The proposed project comprises development of critical infrastructure serving the public in an area subject to high geologic hazards including strong earthquake shaking, liquefaction, and differential settlement. The Applicant has submitted a preliminary seismic hazard analysis that indicates that the proposed WWTF structures and new force main for land application of treated wastewater can be designed to withstand liquefaction-induced differential settlement. Commission staff, including the staff geologist and engineer, has reviewed the preliminary analysis and recommended adherence to more detailed seismic standards, consistent with the California Building Code, demonstrating that the development is designed to minimize risks from seismic hazards. Commission staff therefore recommends **Special Condition 1** requiring a Seismic and Geotechnical Analysis and Hazard Mitigation Plan that demonstrates that the development's design will minimize risks from seismic hazards and assure the stability and structural integrity of the new development, as required under §30253 of the Coastal Act.

The existing discharge pipeline and new irrigation pipeline are located within the mapped 100-year floodplain of the lower Eel River, while the WWTF straddles the floodplain. The Applicant proposes to elevate WWTF improvements above the base flood elevation to address current flood risk, but the Applicant has not provided an analysis of how future sea level rise at the coast will affect the floodplain's elevation and extent at the project site. Higher tides associated with sea level rise will further impair the drainage of the Eel River, as well as the tributaries and stormwater runoff that discharge to the river, thereby increasing backwater flooding and expanding the floodplain over time. Commission staff recommends **Special Condition 2** requiring the WWTF improvements to be safe from flooding (i.e. elevated or flood-proofed) to two feet above the 100-year base flood elevation to account for potential sea level rise through at least 2040, as the proposed improvements have been designed based on projected wastewater flows through 2040.

As Special Condition 2 only ensures minimization of flood risk associated with sea level rise and future storm flows through 2040, Commission staff also recommends **Special Condition 3** limiting the permit authorization period to twenty years and requiring the Permittee to submit an application for an amendment to this Coastal Development Permit (CDP) prior to the expiration of the authorization period of the development in 2039 to extend the authorization. Given that the WWTF is critical infrastructure where flooding could have significant impacts on coastal resources, the future amendment application is required to include a Coastal Hazards Analysis and Adaptation Plan that provides a clear long-term plan to ensure that the approved WWTF improvements minimize flood hazard risks to the wastewater treatment system over the long-term (through at least 2100). Given the outstanding information regarding future risk and structural stability, Commission staff believes that limiting the authorization term and tying reauthorization to a longer-term adaptation planning effort is necessary to assure consistency with Coastal Act §30253.

Staff believes that the proposed development, as conditioned, is consistent with all applicable Chapter 3 policies of the Coastal Act. The motion to adopt the staff recommendation of **approval** of CDP 1-17-0200 with special conditions is found on page 5.

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APPENDICES

EXHIBITS

I. MOTION AND RESOLUTION

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission approve coastal development permit 1-17-0200 pursuant to the staff recommendation.

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment**: The permit is not valid and development shall not commence until a copy of the permit, signed by the Permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration**: If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable amount of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation**: Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment**: The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. Terms and Conditions Run with the Land: These terms and conditions shall be perpetual, and it is the intention of the Commission and the Permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Seismic and Geotechnical Analysis and Hazard Mitigation Plan.**
   A. PRIOR TO COMMENCEMENT OF CONSTRUCTION OF THE DEVELOPMENT AUTHORIZED BY COASTAL DEVELOPMENT PERMIT NO. 1-17-0200, the Permittee shall submit, for the Executive Director's review and written approval, a Seismic and Geotechnical Analysis and Hazard Mitigation Plan prepared by a licensed professional (Certified Engineering Geologist or Geotechnical Engineer) that includes the following:
      i. A site-specific geotechnical investigation for the project site evaluating ground shaking, liquefaction and seismic settlement hazards: (a) based on current California Building Code (CBC 2016) and American Society of Civil Engineer (ASCE 7-16) guidelines; (b) following the criteria in Section 1803 of the CBC; (c) including a quantitative evaluation of the potential for liquefaction and soil strength loss using site peak ground acceleration, earthquake magnitude and source characteristics consistent with the maximum considered earthquake ground motions; and (d) including an assessment of potential consequences with an estimation of total and differential settlement.
      ii. An engineering analysis specific to the project site: (a) describing the specific design measures that will be used to ensure the integrity of the approved development, consistent with the California Building Code, including Sections 1897 and 1808 regarding foundations, foundation walls, and retaining walls; and (b) demonstrating that the approved project structures, including the various components of the upgraded wastewater treatment facility (influent pump station, headworks/rotary drum screen, extended aeration package plant, and UV disinfection system) and new land application system (pump station and subsurface force main), will be designed and constructed to withstand expected levels of ground shaking, liquefaction, and ground settlement as determined in the geotechnical analysis.
      iii. Detailed design and construction plans for the wastewater treatment facility improvements and for the irrigation pipeline, including site plans and elevations, grading plans, foundation plans, and structural plans that, incorporating the results of the required geotechnical investigation and engineering analysis, conform with: (a) the preliminary site plans and project description submitted to the Commission and attached as Exhibits 4 and 5; and (b) the standards of the current California Building Code, including, but not limited to, Sections 1897 and 1808 regarding foundations, foundation walls, and retaining walls.
      iv. An Inspection and Maintenance Plan describing in detail the types and

frequency of inspections and maintenance procedures that will be followed and demonstrating that the inspections and maintenance procedures will be adequate to maintain the wastewater treatment facility improvements and irrigation pipeline in good working condition.

B. The Permittee shall undertake development in accordance with the approved plans. Any proposed changes to the approved plans shall be reported to the Executive Director. No changes to the approved plans shall occur without a Commission amendment to the coastal development permit unless the Executive Director provides a written determination that no amendment is legally required.

2. **Additional Criteria for the Final Design and Construction Plans for the Wastewater Treatment Facility.** The final design and construction plans for the wastewater treatment facility required in Special Condition 1 shall meet the following additional design criteria:
   A. The plans shall demonstrate that all development is setback a minimum of five feet from coastal wetlands.
   B. The plans shall demonstrate that all new structures at the wastewater treatment facility will be safe from flooding (i.e. elevated or flood-proofed) to two feet above the 100-year base flood elevation to account for potential sea level rise through 2040.

3. **Length of Development Authorization**.
   A. The approved development is authorized for 20 years from the date of approval [i.e., through April 10, 2039, the expiration date of this coastal development permit (CDP)]; and the irrigation system for land application of treated wastewater on APN 309-191-012 is authorized only so long as the Permittee is legally authorized by the property owners to use the site, but in no event more than twenty years from the date of Commission approval of the CDP (i.e. until April 10, 2039). By acceptance of this CDP, the Permittee acknowledges and agrees that the development authorized pursuant to this CDP is thus interim and temporary, and is permitted for the time frame identified in order to provide a reasonable period of time for the Permittee to evaluate future risk of coastal hazards as influenced by sea level rise and plan, develop, and implement any necessary responses to coastal hazards including adaptation or relocation alternatives, to ensure minimization of risk in the long term, and to address any coastal resource impacts associated with maintaining the subject development at this location (e.g., impacts associated with any coastal hazards protection measures, such as levee maintenance or expansion).
   B. Prior to the expiration of the authorization period of the development (i.e., before April 10, 2039), the Permittee or its successors shall submit to the Commission an application for a CDP amendment to either (a) remove the approved development in its entirety and restore the affected areas to their pre-development condition, or (b) extend the length of time the development is authorized and modify its design as needed to ensure consistency with the Coastal Act. If a complete application is filed before the end of the authorization period, the authorization period shall be automatically extended until the time the Commission acts on the application.
   C. The required amendment application shall conform to the Commission's permit filing regulations at the time and shall at a minimum include, along with other required information, a **Coastal Hazards Analysis and Adaptation Plan** that provides a clear long-term plan to ensure that the approved WWTF improvements minimize flood

hazard risks to the WWTF through at least 2100. The plan shall include:

i. Information on flood conditions and other coastal hazards in the project area obtained through periodic monitoring and recording of conditions in the project area during winter storms, including when the Eel River reaches or exceeds flood stage (20-foot crest) at the Fernbridge tide gauge. The information should include an assessment of cumulative changes to the approved development's coastal hazard risk over time.

ii. A geotechnical analysis of current and future coastal hazards in the project area, including flood hazards and hazards caused by elevated groundwater and reduced or inadequate drainage, taking into account local sea level rise and seismic and aseismic subsidence through at least 2100, considering medium-high risk aversion and extreme risk aversion scenarios, and based on the best available science at the time of plan preparation. The analysis shall address flooding associated with large storm events (the 100 year storm or greater).

iii. An engineering analysis evaluating the impacts of flooding and other coastal hazards [as determined in the geotechnical analysis in (ii) above] through at least 2100 on the wastewater treatment and treated wastewater discharge/reuse systems, and describing specific design elements and mitigation measures necessary to ensure the integrity and functionality of the system.

iv. An evaluation of alternatives to the current wastewater treatment and treated wastewater discharge/reuse systems to address any coastal hazard vulnerabilities identified, including but not limited to alternatives involving relocation of the development to an area safe from flooding and other coastal hazards or development of a new system for wastewater treatment and/or treated wastewater disposal/reuse (including consolidation with other nearby facilities). The information concerning these alternatives must be sufficiently detailed to enable the Coastal Commission to evaluate the feasibility of each alternative for addressing consistency with the Coastal Act, including whether the alternatives minimize risks of geologic and flood hazards and assure stability and structural integrity; and how the alternatives impact coastal resources. The analysis shall include a feasibility analysis of the alternatives that evaluates and considers all potential constraints, including geotechnical and engineering constraints, potential phasing options with timelines, project costs, and potential funding options.

v. A plan for protecting, adapting, relocating or otherwise changing the current wastewater treatment and treated wastewater discharge/reuse systems if necessary to maintain safety from flooding and other coastal hazards at defined times (e.g. 2059, 2069, etc.) or in response to defined triggers in order to minimize risk and assure stability and structural integrity in the long-term (at least through 2100), including expected timeframes for any necessary land acquisition, planning, permitting, design, and construction.

4. **Assumption of Risk, Waiver of Liability, and Indemnity Agreement.** By acceptance of this permit, the Permittee acknowledges and agrees (a) that the site may be subject to hazards from geologic and flood hazards, including but not limited to ground shaking, liquefaction, tsunami inundation, and flooding; (b) to assume the risks to the Permittee and

the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (c) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (d) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

5. **Future Development Restriction.** This permit is only for the development described in Coastal Development Permit Application 1-17-0200. Any future improvements or modifications to the wastewater treatment facility or other approved development will require a permit amendment to Coastal Development Permit 1-17-0200 from the Commission, unless the Executive Director determines that no amendment is legally required.

6. **State Lands Commission Approval.** PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-17-0200, the Applicant shall provide to the Executive Director a written determination from the State Lands Commission that: (A) no State or public trust lands are involved in the development; or (B) State or public trust lands are involved in the development and all permits required by the State Lands Commission have been obtained; or (C) State or public trust lands may be involved in the development, but, pending a final determination, an agreement has been made with the State Lands Commission for the approved project as conditioned by the Commission to proceed without prejudice to that determination.

7. **Construction Responsibilities.** The Permittee shall comply with the following construction-related best management practices (BMPs) and avoidance and minimization measures:
   A. The following required measures are listed in the "Project Description" for the Loleta Community Services District Wastewater Treatment Facility and Effluent Disposal Improvement Project dated May 23, 2018 and prepared by SHN (Exhibit 5) and/or the January 3, 2019 SNH letter to Commission staff:
      i. During construction activities at the WWTF, all ground disturbing activity shall be set back at least five feet from the edge of the wetland. The five-foot buffer shall be physically demarcated using construction fencing that will be placed and periodically maintained by a qualified biologist. Contractors shall be educated on the purpose of the wetland setback and construction specifications and bid documents shall prohibit any construction activity within five feet of the wetland;
      ii. During trenching in agricultural areas (including all wetland areas), the top six inches of excavated material shall be separately stockpiled by the contractor. The contractor shall assure that this stockpiled soil material is kept moist and that the material is restored to the construction trench as soon as is feasible. This topsoil material shall be reintroduced as the top fill material in the restored trench section;

iii. Prior to the commencement of construction in agricultural fields, the limits of the approved work areas shall be physically delineated, limiting the potential area affected by construction; and workers shall be educated about the limitations on construction;
iv. All vehicles and equipment shall be restricted to pre-established work areas and access routes, as shown in the project description (Exhibit 4, pg. 2);
v. No riparian vegetation shall be removed;
vi. Repair of the wastewater discharge pipeline and construction of the new irrigation pipeline including all work in wetlands shall occur during the dry season only (from May 15th through September 30th);
vii. If rainfall is forecasted during the time construction activities are being performed, all onsite stockpiles of soil, gravel, and construction debris shall be covered and secured before the onset of precipitation. After a rainstorm, all silt and debris shall be removed from the construction area and stormwater controls.
viii. No excavated soil or construction debris shall be temporarily placed or stored where it may be subject to entering the remnant slough wetland or the Eel River or its tributaries or other coastal waters. All onsite stockpiles of soil and construction debris shall be contained at all times to minimize discharge of sediment and other pollutants;
ix. No debris, soil, silt, sand, trash, concrete or washings thereof, oil or other petroleum products or washings thereof, or other foreign materials shall be allowed to enter or be placed where it may be washed by rainfall or runoff into jurisdictional waters of the U.S. or state;
x. During construction, all trash shall be removed from the work site and disposed of on a regular basis to avoid contamination of habitat. Any and all debris resulting from construction activities shall be removed from the project site and disposed of at an authorized disposal location within 10 days of project completion and/or prior to the onset of the rainy season, whichever is earlier. All spoils and construction debris will be hauled off site and disposed of at an appropriately permitted upland disposal facility (landfill or recycling plant);
xi. Only wildlife-friendly 100% biodegradable erosion control products that will not entrap or harm wildlife shall be used. Erosion control products shall not contain synthetic (that is, plastic or nylon) netting. Photodegradable synthetic products are not considered biodegradable;
xii. Fuels, lubricants, and solvents shall not be allowed to enter storm drain systems or jurisdictional waters of the U.S. or state. All equipment used during construction shall be free of oil and fuel leaks at all times;
xiii. BMPs for concrete paving and grinding operations, and storm drain inlet protection shall be employed to prevent concrete grindings, concrete slurry, and paving rinseate from entering drop inlets or sheet-flowing into coastal waters; and
xiv. Hazardous materials management equipment, including oil containment booms and absorbent pads shall be available and immediately on hand at the project site. A registered first-response, professional, hazardous materials clean-up/remediation service shall be locally available on call. Any accidental spill

shall be contained rapidly and cleaned up. In the event of a spill, the Permittee shall notify the appropriate regulatory agencies immediately.

B. The following are additional measures the Permittee shall implement:
   i. All ground-disturbing activities and asphaltic-concrete paving operations shall occur during dry weather only;
   ii. Upon completion of component construction activities and prior to October 15th, all temporarily disturbed agricultural lands (including but not limited to areas disturbed by trenching and construction materials and equipment staging and access) shall be decompacted, recontoured, and reseeded, as needed, to restore pre-project conditions. Revegetation shall occur with a mix of regionally appropriate native grasses and/or noninvasive agricultural species. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by the State of California, shall be employed on the site. No plant species listed as a "noxious weed" by the governments of the State of California or the United States shall be utilized within the property; and
   iii. In areas where excess soil from the trenches is broadcast within the construction corridors, soil placement shall be limited to twenty-two feet of the existing discharge pipeline or twelve feet of the new irrigation pipeline. If soil is placed within the construction corridors, a qualified engineer shall be on site during final grading and recontouring activities to ensure that the construction corridors are graded and recontoured consistent with the elevation of the adjacent grazed seasonal wetlands and no depressions, ridges, or mounds result.

8. **Erosion and Sediment Control and Pollution Prevention Plan**
   A. PRIOR TO COMMENCEMENT OF CONSTRUCTION OF THE DEVELOPMENT AUTHORIZED BY COASTAL DEVELOPMENT PERMIT NO. 1-17-0200, the Permittee shall submit, for the review and written approval of the Executive Director, an erosion and sediment control and pollution prevention plan. The plan shall comply with the following requirements:
      i. The plan shall demonstrate that temporary construction impacts to the biological productivity and quality of coastal waters and wetlands shall be minimized during project construction consistent with the provisions of **Special Condition 7**.
      ii. The plan shall include a construction site map and a narrative description addressing, at a minimum, the following required components:
         a. A map delineating the construction site, construction phasing boundaries, and the location of all temporary construction-phase BMPs.
         b. A description of the BMPs that will be implemented to minimize erosion and sedimentation, control runoff and minimize the discharge of other pollutants resulting from construction activities.
         c. A schedule for the management of all construction-phase BMPs (including installation and removal, ongoing operation, inspection, maintenance, and training).
      iii. The plan shall specify that copies of the signed Coastal Development Permit (CDP) and the approved Erosion and Sediment Control and Pollution

Prevention Plan be maintained in a conspicuous location at the construction job site at all times, and be available for public review on request. All persons involved with the construction shall be briefed on the content and meaning of the CDP and the approved Erosion and Sediment Control and Pollution Prevention Plan, and the public review requirements applicable to them, prior to commencement of construction.

B. The Permittee shall notify planning staff of the Coastal Commission's North Coast District Office at least three working days in advance of commencement of construction or maintenance activities, and immediately upon completion of construction or maintenance activities.

C. The Permittee shall undertake development in accordance with the approved final Erosion and Sediment Control and Pollution Prevention Plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

9. **Debris Removal Plan**

A. PRIOR TO COMMENCEMENT OF CONSTRUCTION OF THE DEVELOPMENT AUTHORIZED BY COASTAL DEVELOPMENT PERMIT NO. 1-17-0200, the Permittee shall submit, for the review and written approval of the Executive Director, a plan for the disposal of excess construction related debris. The plan shall identify a disposal site that is in an upland area where materials may be lawfully disposed and describe the manner by which the material will be removed from the construction site.

B. The Permittee shall undertake development in accordance with the approved final Debris Removal Plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

10. **Grazed Seasonal Wetland Vegetation Monitoring.** The Permittee shall submit a vegetation monitoring report for the review and written approval of the Executive Director within 18 months after completion of repairs to the existing discharge pipeline and installation of the new irrigation force main with vertical risers in agricultural fields. The monitoring report shall be prepared by a qualified biologist or botanist and shall evaluate whether the objective of reestablishing vegetation in any of the grazed seasonal wetland areas impacted by project construction to a level of coverage and density equivalent to vegetation coverage and density of the surrounding undisturbed areas has been achieved. If the report indicates that the revegetation of any of the areas disturbed by construction has not been successful, in part, or in whole, the Permittee shall submit a revised revegetation program to achieve the objective. The revised revegetation program shall require an amendment to this coastal development permit.

11. **Protection of Bird Nesting Habitat.**

A. As proposed by the Applicant, if vegetation removal or ground-disturbing activity will take place during the nesting season (February 15th to August 15th), a qualified

biologist shall conduct a pre-construction nesting bird survey. Pre-construction surveys for nesting pairs, nests, and eggs shall occur within the construction limits and within 100 feet (200 feet for raptors) of the construction limits within five days of the commencement of construction.

B. Any pre-construction nesting bird survey required pursuant to subpart A shall be conducted according to current California Department of Fish and Wildlife (CDFW) protocol.

C. If any active nest is encountered during preconstruction surveys, the biologist, in consultation with CDFW, shall determine the extent of a construction-free buffer zone to be established around the nest, and construction in the buffer zone shall be delayed until after the young have fledged, as determined by additional surveys conducted by a qualified biologist. The construction-free buffer zone shall be a minimum of 250 feet for nesting raptors and a minimum of 50 feet for other sensitive bird species.

12. **Protection of Northern Red-legged Frogs (*Rana aurora*)**

A. Immediately prior to commencement of ground disturbance within 50 feet of all suitable northern red-legged frog habitat located within the construction limits, a qualified biologist shall perform a pre-construction survey for the northern red-legged frog in consultation with the California Department of Fish and Wildlife (CDFW) as proposed by the Applicant. In addition, the biologist shall coordinate with the CDFW staff to relocate any animals that occur within the construction limits to nearby suitable habitat.

B. Immediately following a relocation survey, tall grass in the survey area that has not been grazed shall be mowed or an exclusion fence shall be placed around the surveyed construction area, as proposed by the Applicant, to reduce the likelihood that frogs will enter the construction area.

C. In the event that a northern-red legged frog is observed in an active construction zone, the contractor shall immediately halt construction activities until a biologist, in consultation with CDFW, has moved the frog to a safe location in similar habitat outside of the construction zone.

13. **Post-Development Stormwater Management Plan for the Wastewater Treatment Facility.**

A. PRIOR TO COMMENCEMENT OF CONSTRUCTION OF THE DEVELOPMENT AUTHORIZED BY COASTAL DEVELOPMENT PERMIT NO. 1-17-0200, the Permittee shall submit, for the review and written approval of the Executive Director, a post-development stormwater management plan for the wastewater treatment improvement area. The plan shall demonstrate that the project complies with the following requirements:

i. The plan shall be prepared by a qualified California-licensed professional (e.g., Registered Professional Civil Engineer, Geotechnical Engineer, Geologist, Engineering Geologist, Hydrogeologist, or Landscape Architect).

ii. The plan shall address runoff from all new and/or replaced impervious and semi-pervious surfaces.

iii. The plan shall implement a low-impact-development (LID) approach to stormwater management that will retain on-site (by means of infiltration, evapotranspiration, or harvesting), at a minimum, the runoff produced by the 85th percentile 24-hour design storm (see iv(d)., below), to the extent appropriate and feasible. In implementing an LID approach, priority shall be given to the use of preventive LID Site Design strategies (such as reducing impervious surface area) to minimize post-development changes in the site's stormwater flow regime, supplemented by use of structural LID BMPs if needed to mitigate any unavoidable changes in stormwater flows. Where feasible, direct stormwater runoff from all impervious surfaces to, in order of priority, a) landscaped areas or open spaces capable of infiltration; b) earthen-based infiltration BMPs (such as an infiltration basin); c) flow-through biofiltration BMPs (such as a vegetated swale); d), manufactured infiltration BMPs (such as a permeable pavement system); and if infiltration is not feasible, e) proprietary filtration systems (such as an inlet filter).

iv. The plan shall include, at a minimum, the following required components:

a. A polluted runoff and hydrologic characterization of the site (e.g., potential pollutants in runoff, soil properties, infiltration rates, depth to groundwater, and the location and extent of hardpan and confining layers) as necessary to design the proposed BMPs.

b. A site plan, drawn to scale, showing the property boundaries, areas of impervious and semi-pervious surfaces, runoff flow directions, relevant drainage features, and structural BMPs.

c. A description of the post-construction stormwater management BMPs that will be implemented including a schedule for installation or implementation of all BMPs.

d. Supporting calculations demonstrating that required BMPs have been sized and designed to infiltrate, retain, or treat, at a minimum, the runoff produced by the 85th percentile 24-hour storm event for volume-based BMPs, or two times the 85th percentile 1-hour storm event for flow-based BMPs.

e. A description and calculations demonstrating that the 85th percentile design storm runoff volume will be retained on-site, giving precedence to an LID approach. If the 85th percentile runoff volume cannot be retained on site using LID, an alternatives analysis shall demonstrate that no feasible alternative project design will substantially improve runoff retention.

f. A description and schedule for the ongoing management of all post-development BMPs (including operation, maintenance, inspection, and training) that will be performed for the life of the development, if required for the BMPs to function properly.

B. The Permittee shall undertake development in accordance with the approved final Post-Development Stormwater Management Plan for the Wastewater Treatment Facility. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a

Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

14. **Protection of Archaeological Resources.** If an area of cultural deposits or human remains is discovered during the course of the project, all construction shall cease and shall not re-commence until a qualified cultural resource specialist, in consultation with the Tribal Historic Preservation Officers of the Wiyot Tribe, the Bear River Band of Rohnerville Rancheria, and the Blue Lake Rancheria, analyzes the significance of the find and prepares a supplementary archaeological plan for the review and approval of the Executive Director, and either: (a) the Executive Director approves the Supplementary Archaeological Plan and determines that the Supplementary Archaeological Plan's recommended changes to the proposed development or mitigation measures are *de minimis* in nature and scope, or (b) the Executive Director reviews the Supplementary Archaeological Plan, determines that the changes proposed therein are not *de minimis*, and the Permittee has thereafter obtained an amendment to Coastal Development Permit 1-17-0200.

15. **Final Lighting Plan for the Wastewater Treatment Facility.** PRIOR TO COMMENCEMENT OF CONSTRUCTION OF THE DEVELOPMENT AUTHORIZED BY COASTAL DEVELOPMENT PERMIT NO. 1-17-0200, the Permittee shall submit, for the review and written approval of the Executive Director, a final lighting plan for all new outdoor night lighting at the wastewater treatment facility.
    A. The plan shall demonstrate that:
        i. All new outdoor night lighting shall be minimized, directed downward, and shielded using the best available dark skies technology and pole height and design that minimizes light spill, sky glow, and glare impacts.
        ii. Security lighting attached to structures shall use a control device or automatic switch system or equivalent functions to minimize lighting. The control system shall include controls that automatically extinguish all outdoor lighting when sufficient daylight is available.
    B. The Permittee shall undertake development in accordance with the approved final Lighting Plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

16. **Evidence of Legal Ability of Applicant to Undertake Development on Property Owned by Others and Comply with Conditions of Approval.** PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-17-0200, the Applicant shall submit, for the review and approval of the Executive Director, evidence that clearly demonstrates that the legal owner(s) of APNs 309-211-007, 309-211-002, 309-251-002, and 309-191-012 have agreed in writing that the Applicant may undertake development on their property pursuant to Coastal Development Permit 1-17-0200 and as conditioned by the Commission herein.

IV. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares as follows:

A. PROJECT DESCRIPTION

The Loleta Community Services District (Loleta CSD) maintains and operates a wastewater treatment system that serves a current population of approximately 780 persons[1] in the unincorporated community of Loleta in Humboldt County (See Exhibits 1 and 2 for maps of the project location). The system includes 4.1 miles of collection pipe throughout town, a wastewater treatment facility (WWTF) on the edge of town, and a discharge pipeline for treated wastewater that travels under grazed pasture land and empties into a wetland tributary of the Eel River approximately 0.66 miles southwest and downgradient of the WWTF. The proposed project consists of three components: (1) upgrades to the existing WWTF; (2) repair of the existing subsurface treated wastewater discharge pipeline; and (3) installation of a new land application system for irrigation of agricultural land with treated wastewater. See Exhibit 5 for a copy of the project description submitted by the Applicant.

Upgrades to the Existing WWTF

Loleta's WWTF was constructed in 1956 and consists of a single series process train, including headworks, aeration tank, secondary clarifier, and chlorine contact basin. Proposed improvements to the WWTF include a new influent pump station (including submersible sewage pumps with variable frequency drives placed in a wet well), primary treatment in the form of a rotary drum screen, extended aeration secondary treatment, and an ultraviolet (UV) disinfection system. These components are discussed in greater detail in Appendix B. Also, schematic diagrams of the existing and proposed treatment processes are included as Exhibit 6.

The current footprint of the WWTF will be expanded from 8,330 square feet to approximately 10,535 square feet to accommodate the aforementioned improvements. See Exhibit 4, page 3 for a site plan of the WWTF showing the expanded footprint.

Repairs to the Existing Wastewater Discharge Pipeline

The Loleta CSD proposes to repair and replace six segments, totaling 1,465 linear feet, of an existing approximately 3,700-foot-long subsurface pipeline for discharge of treated wastewater located below agricultural lands that are also predominately seasonal wetlands (See Exhibit 4, page 4). In addition, three manholes within the existing discharge pipe alignment would be repaired and one new manhole would be constructed within the same footprint of the existing pipe alignment. No expansion or enlargement of the 12-inch concrete pipe is proposed. All construction impacts and staging would occur within twenty-five feet of the discharge pipeline centerline.

Under the proposed project, a total of approximately 1,225 linear feet of discharge pipe would be replaced using open trenching methods within grazed agricultural uplands and wetlands. The proposed trench would have a width of three feet and depths ranging from 2.5 to thirteen feet, with excavated soil from the trenches placed within twenty-two feet of the trench. In addition,

[1] The 2010 U.S. Census reported that Loleta had a population of 783.

approximately 240 feet of pipe that crosses underneath a remnant slough with standing water and riparian habitat that is located in the middle of agricultural fields midway between the WWTF and the discharge pipeline outfall would be repaired using trenchless methods to avoid disturbance of the slough. The proposed trenchless repair method is called fold-and-form, and does not use any chemical additives.[2]

Installation of a New Land Application System for Irrigation of Agricultural Lands
The Loleta CSD proposes to develop a new land application system on approximately 47 acres of grazed seasonal wetlands adjacent to the WWTF for the proposed discharge of treated wastewater effluent during the dry season. Proposed work includes (a) constructing a new pump station on the WWTF property; (b) installing a new subsurface 4-inch diameter pipeline between the new pump station and the land application site (a distance of approximately 2,150 feet); and (c) installing vertical risers along the subsurface pipeline to which a mobile above-ground sprinkler system can be connected during the dry season to irrigate agricultural lands (See Exhibit 4, pg. 5 for a site plan of the new land application system). The proposed sprinkler system is a mobile reel of flexible pipe with a sprinkler head on the end of the pipe. The sprinkler head is pulled out from the reel by a small tractor and then the sprinkler is drawn back into the reel as it irrigates. Then the entire reel unit is moved to another header location and drawn back out for irrigation of a new part of the field.

The new subsurface force main is proposed to be installed using open trenching methods. The trenching would occur in grazed wetlands and would be three-foot deep by three-foot wide, with excavated soil from the trenches placed within twelve feet of the new pipeline (for a fifteen-foot-wide disturbance area).

Construction Timing
Construction of the WWTF improvements is proposed to take approximately 15 months and would occur year-round. Repair of the wastewater discharge pipeline and construction of the land application system would occur during the dry season only (from May 15th until the end of September). Repair of the existing wastewater discharge pipeline is proposed to occur over approximately 100 work days, while construction of the land application system is proposed to occur over approximately 80 work days.

If the discharge pipeline repairs are conducted following construction of the new land application system, no bypass pumping of effluent in the discharge pipeline would be required as the treated wastewater could be routed to the land application system for discharge. If repair of the discharge pipeline must occur before the new land application system is constructed,[3] flow in the pipe would be bypassed by hose around the segments under repair. While work is being conducted on a section of the pipe, the pipe would be plugged on the upstream end and effluent

[2] Fold-and-form pipe repair inserts deformed polyvinyl chloride (PVC) pipe into the host pipe, and expands the deformed new pipe once inserted, forming a new pipe inside the host pipe. PVC pipe is manufactured as a flexible sleeve which is wound around spools. The flexible PVC liner is heated to increase flexibility, then pulled through the existing host pipe, sealed at either end, and injected with steam to cure the pipe as it conforms to the inside of the host pipe.

[3] Because of timing constraints, both the discharge pipeline and new irrigation force main may need to be worked on concurrently (based on a phone conversation with Applicant's consultant, March 11, 2019).

would be pumped out of the closest manhole to a manhole on the downstream end of the section on which work is being conducted. The portable pump would be located next to the upstream manhole and the hose would be laid parallel to the existing pipeline in the field and routed to the downstream manhole.

Equipment and Staging
Equipment to be used during construction at the WWTF would include pickup trucks, commercial delivery trucks, concrete trucks, backhoes, excavators, and cranes. Access to the WWTF would occur from Eel River Drive and construction equipment and materials would be staged in upland areas adjacent to the existing developed portion of the parcel.

Construction equipment for replacing sections of the subsurface discharge pipeline would include two or three double-axle flatbed trucks for delivering materials and equipment to the site, a backhoe or excavator for trenching, dump trucks for transport of excavated and backfill material, and small pickup trucks for transport of personnel. Equipment to be used during construction of the land application system would include backhoes, excavators, commercial delivery trucks, and pickup trucks. Construction access for the proposed work in agricultural fields would be from Eel River Drive and Duncan Road. Trucks and equipment would need to drive across and park on the agricultural fields in order to access the pipeline and manholes for construction. All vehicles and equipment would be restricted to pre-established work areas and access routes, as shown in Exhibit 4, page 2. Prior to the commencement of construction, the limits of the approved work areas would be physically delineated, and workers would be educated about the limitations on construction.

During trenching in agricultural fields including wetland areas, the top six inches of excavated soil would be stockpiled and kept moist and restored to the construction trench as top fill material as soon as feasible. Following completion of work, disturbed areas would be restored to their previous condition, including recontouring, reseeding, and decompacting where appropriate. All construction activities at the WWTF would be setback at least five feet from the edge of wetlands.

B. BACKGROUND & SETTING

Project Background
The purpose of the project is to bring the wastewater treatment system into compliance with the effluent requirements and terms of the Loleta CSD's most recent National Pollutant Discharge Elimination System (NPDES) permit issued by the North Coast California Regional Water Quality Control Board (Regional Board). The NPDES permit sets forth specific discharge requirements to ensure protection of public health, environmental health, and water quality. The permit is renewed every five years and at each renewal, the permit may incorporate new treatment objectives and discharge standards. The system is unable to meet the most recent NPDES permit requirements (Order No. R1-2014-0013, adopted May 8, 2014), and the Regional Board has adopted a Cease and Desist Order R1-2015-0008, giving the Loleta CSD until December 31, 2019 to either upgrade or replace the existing system to achieve compliance with all limits set forth in the permit.

Under the current NPDES permit, discharges of treated effluent to the Eel River and its tributaries, including wetlands, are prohibited from May 15th through September 30th (during the dry season). From October 1st through May 14th (during the wet season), discharges of treated wastewater are limited to one percent of the flow of the Eel River. These discharge limitations are required by the Regional Board's Water Quality Control Plan for the North Coast Region, which establishes water quality objectives, and contains implementation programs and policies to achieve those objectives, for all waters addressed in the plan, including the lower Eel River. The purpose of the seasonal prohibition is to prevent contribution of wastewater to the baseline flow of the lower Eel River during the period of the year when the Eel River and its tributaries experience the heaviest water-contact recreational use and when flows are the lowest.

Currently, the WWTF discharges disinfected secondary treated wastewater year-round to a wetland at the easternmost extension of Ropers Slough, tributary to the Eel River, in violation of the NPDES permit. The proposed installation of a land application system would enable the Loleta CSD to reroute treated wastewater to irrigate grazed agricultural lands during times when wetland discharge is prohibited (during the dry season and during the wet season when discharges would be greater than one percent of the flow of the Eel River).

The Loleta CSD proposes to continue to use the existing discharge location during the allowed wet weather discharge period, from October 1st through May 14th. Continued use of this pipeline requires repairs to maintain its integrity over the next twenty years. An additional manhole is also needed so that the pipeline can be accessed at regular intervals for repairs and maintenance. The repairs to the discharge pipeline will have the permanent positive effect of reducing the existing problem of "inflow and infiltration" of stormwater into the wastewater discharge pipe, reducing the likely existing delivery of sediment from stormwater runoff to the wetland where the pipe outfall is located.

The Loleta CSD also proposes upgrades to the existing WWTF which was constructed in 1956 and is nearing the end of its useful life. The facility is unable to meet increasingly stringent NPDES permit requirements including new effluent limitations for copper, carbon tetrachloride, chlorodibromomethane, dichlorobromomethane, and nitrate required under the current NPDES permit (the existing facility was not designed to treat these compounds). According to the Regional Board's cease and desist order, in 2014 and 2015 the wastewater treatment system violated discharge standards for the newly regulated compounds listed above, as well as for low pH, and inadequate chlorine residuals.

According to the Applicant, the proposed new extended aeration system would reliably meet current and future effluent discharge standards for land application and discharge to Eel River, with effluent ammonia concentration less than 1 milligram per liter (mg/L), and total nitrogen concentrations of less than 10 mg/L. In addition, while the existing facility uses chlorine for disinfection and sulfur dioxide to remove residual chlorine, the new WWTF design would rely on UV lamps for disinfection, eliminating issues with residual chlorine and chlorine byproducts and avoiding the health and safety risks associated with chlorine.[4]

[4] Chlorine is highly toxic and corrosive, posing a safety risk during shipping, handling, and storage; chlorine residual is toxic to aquatic life at low dosages; and chlorine oxidizes certain types of organic matter, creating hazardous byproducts (2016 Wastewater Facilities Plan).

In addition to compliance issues with (1) a seasonal prohibition on discharge to the Eel River and its tributaries and (2) effluent limitations on certain chemicals, the existing wastewater treatment system also regularly exceeds its average wet weather flow (measured daily and averaged over a calendar month) due to ongoing stormwater inflow and infiltration (I/I) into the collection system (Cease and Desist Order No. R1-2015-0008). The proposed project does not include any changes to the wastewater collection system which is located entirely within the County's coastal development permit jurisdiction. However, the Loleta CSD is separately pursuing repairs to the wastewater collection system to address these significant I/I issues. The Loleta CSD estimates that when implemented, these repairs to the collection system will result in an approximately 41% reduction in I/I.

Setting

The unincorporated community of Loleta is located approximately eight miles south of the City of Eureka and five miles east of the Pacific Ocean (See Exhibits 1 and 2). Originally developed as a railroad town over 100 years ago, Loleta is located at the foot of the southern slopes of Table Bluff, a three-hundred-foot-high sandstone ridge forming a natural barrier between the Eel River Delta and Humboldt Bay. The community sits atop a small ridge that slopes westwards towards the agricultural bottomlands (floodplain) of the Eel River Delta. The approximately 780 residents of the community lived within 300 housing units in 2013.

The Loleta CSD's service area is approximately 106 acres in size and is located entirely within the coastal zone and within the urban limit line established by the certified Humboldt County Local Coastal Program around the community of Loleta (Exhibit 3).

The WWTF is located on the western edge of Loleta's urban area adjacent to the agricultural bottomlands on an approximately 0.54-acre parcel at 2656 Eel River Drive (APN 309-211-006). The existing discharge pipeline for treated wastewater runs southwest from the WWTF approximately 3,700 feet through three agricultural parcels to an outfall at the easternmost extension of Ropers Slough approximately 0.5 miles north of the active channel of the Eel River (APNs 309-211-007, 309-211-002, and 309-251-002). The proposed new land application system is proposed on an approximately 55.5-acre agricultural parcel located directly northwest of the WWTF along the south side of Cannibal Island Road (APN 309-191-012). See Exhibit 4, page 1 for a map of project components that includes parcel boundaries.

The project site ranges from approximately ten- to forty-feet above mean sea level with the highest elevations at the WWTF, dropping to slightly less than ten feet at the discharge point in Ropers Slough. Due to the location of the project near the mouth of the Eel River, the majority of the soils found across the agricultural lands are alluvial, deposited by flood events from the Eel River.

The majority of the WWTF parcel is covered in fill and has been graveled over for parking and all weather access. The developed footprint of the wastewater treatment facility and an undeveloped area on the southeast portion of the parcel where the facility expansion is proposed are uplands associated with the historic fill. The remainder of the parcel is covered in wetlands associated with a drainage ditch that runs along the southern boundary of the parcel.

Both the existing wastewater discharge pipeline and proposed land application system are located on lands actively used for agriculture, primarily grazing and cultivation. The agricultural fields crossed by the existing treated wastewater discharge pipeline are predominately wetlands, and the field where the land application system is proposed is entirely wetland. See Exhibit 7 for a map of wetlands within the project footprint.

With the exception of a slough remnant located approximately midway between the WWTF and the discharge point in Ropers Slough, the fields are characterized by vegetation typical of agricultural fields used for grazing and cultivation of crops with over 80% of species being non-native. Dominant species in the pasture land include ryegrass (*Festuca perennis*), creeping bentgrass (*Agrostis stolonifera*), creeping buttercup (Ranunculus repens), white clover (*Trifolium repens*), and orchard grass (*Dactylis glomerata*). The slough remnant that the discharge pipeline passes under includes open water and riparian woodlands dominated by a mix of Hooker willow (*Salix hookeriana*) and pacific willow (Salix lasiandra var. lasiandra) in the tree stratum, with a shrub stratum composed primarily of Himalayan blackberry, with lesser dominance by California blackberry (*Rubus ursinus*), salmonberry (*Rubus spectabilis*), and red elderberry (*Sambucus racemosa var. racemosa*).

The Eel River basin is the largest drainage basin in Humboldt County, reaching from the Coastal Range north of Clear Lake and terminating along the ocean south of Eureka. The river drains about 2.28 million acres, carrying some 10 percent of California's runoff and the highest loads of suspended sediment of any river of its size in the United States (County of Humboldt, 2014). The WWTF is located a little over a mile north of the active channel of the lower Eel River. The lower Eel River within the project vicinity is designated critical habitat for three federally threatened fish species: Coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*Oncorhynchus tshawytscha*), and steelhead trout (*Oncorhynchus mykiss*). The lower Eel River is listed as impaired for sedimentation/siltation, dissolved oxygen, and temperature under Clean Water Act Section 303(d).

C. STANDARD OF REVIEW

The proposed project is located entirely within the coastal zone and includes areas within the retained coastal development permit (CDP) jurisdiction of the Commission and the CDP jurisdiction delegated to the County of Humboldt by the Commission through the County's certified local coastal program (LCP). The WWTF is entirely within Humboldt County's CDP jurisdiction, while the repairs to the existing wastewater discharge pipeline and the new land application site are located predominately within the Commission's retained CDP jurisdiction.

Section 30601.3 of the Coastal Act authorizes the Commission to process a consolidated CDP application when requested by the local government and the Applicant and approved by the Executive Director for projects that would otherwise require CDPs from both the Commission and from a local government with a certified LCP. In this case, the Humboldt County Board of Supervisors adopted a resolution, and both the Applicant and the County submitted letters requesting consolidated processing of the CDP application by the Commission for the subject project. The Executive Director agreed to the consolidated permit processing requests.

The policies of Chapter 3 of the Coastal Act provide the legal standard of review for a consolidated CDP application submitted pursuant to Section 30601.3. The local government's certified LCP may be used as guidance.

D. OTHER AGENCY APPROVALS

Humboldt County
The County requires a conditional use permit for the portion of the project proposed on agricultural lands. The County Zoning Administrator approved the project on February 21, 2019 by Resolution 19-15.

U.S. Army Corps of Engineers (Army Corps)
The Army Corps has regulatory authority over the proposed project under Section 404 of the Clean Water Act which regulates the discharge of dredged or fill material in waters of the United States. In a letter dated November 21, 2018, the Army Corps determined that the proposed work is covered under an existing 404 Nationwide Permit #12 for Utility Line Activities (File No. 2018-00455N).

North Coast Regional Water Quality Control Board (Regional Board)
The Regional Board requires a water quality certification for projects involving dredging and/or filling activities under Section 401 of the Clean Water Act. On February 6, 2019, the Regional Board approved the necessary 401 certification for the project (WDID 1B180147).

State Water Resources Control Board (State Board)
Water Code Section 1211 requires the owner of any wastewater treatment facility to obtain approval from the State Board prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater, when changes in the discharge or use of treated wastewater result in decreasing the flow in any portion of a watercourse. The proposed project would reduce discharges to the Eel River by an average of 62,000 gallons per day up to 84,000 gallons per day between May 15 and September 30. The Loleta CSD filed a wastewater change petition (WW0102) on December 17, 2018, and the petition was approved on February 26, 2019.

California Department of Fish and Wildlife (CDFW)
CDFW Code Section 1602 requires any person, state or local governmental agency, or public utility to notify CDFW before beginning any activity that will substantially modify a river, stream or lake. If CDFW determines that the activity may substantially adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement must be prepared. On November 27, 2018, CDFW issued a Streambed Alteration Agreement for the proposed activity (SAA No. 1600-2018-0584-R1).

California State Lands Commission (State Lands)
State Lands has jurisdiction and management authority over public trust lands, including all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. State Lands also has review authority over public trust lands legislatively granted in trust to local governments. Portions of the project area may be subject to the public trust. To ensure that the Applicant has a sufficient legal property interest in the site to carry out the project consistent

with the terms and conditions of this permit, the Commission attaches **Special Condition 6**. This condition requires that the Applicant submit evidence that any necessary authorization from State Lands has been obtained prior to issuance of the CDP.

E. PUBLICLY-OWNED WASTEWATER TREATMENT WORKS

Section 30254 of the Coastal Act states, in applicable part:

> *New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses permitted consistent with the provisions of this division… Where existing or planned public works facilities can accommodate only a limited amount of new development, services to coastal dependent land use, essential public services and basic industries vital to the economic health of the region, state, or nation, public recreation, commercial recreation, and visitor-serving land uses shall not be precluded by other development.*

Section 30254.5 of the Coastal Act states:

> *Notwithstanding any other provision of law, the commission may not impose any term or condition on the development of any sewage treatment plant which is applicable to any future development that the commission finds can be accommodated by that plant consistent with this division. Nothing in this section modifies the provisions and requirements of Sections 30254 and 30412.*

Section 30412 of the Coastal Act cited above states, in applicable part (<u>emphasis added</u>):

…

> *(b) The State Water Resources Control Board and the California regional water quality control boards are the state agencies with primary responsibility for the coordination and control of water quality. The State Water Resources Control Board has primary responsibility for the administration of water rights pursuant to applicable law. The commission shall assure that proposed development and local coastal programs shall not frustrate this section. <u>The commission shall not, except as provided in subdivision (c), modify, adopt conditions, or take any action in conflict with any determination by the State Water Resources Control Board or any California regional water quality control board in matters relating to water quality</u> or the administration of water rights.*
>
> *Except as provided in this section, nothing herein shall be interpreted in any way either as prohibiting or limiting the commission, local government, or port governing body from exercising the regulatory controls over development pursuant to this division in a manner necessary to carry out this division.*
>
> *(c) <u>Any development within the coastal zone or outside the coastal zone which provides service to any area within the coastal zone that constitutes a treatment work shall be reviewed by the commission and any permit it issues, if any, shall be determinative only with respect to the following aspects of the development:</u>*

> *(1) The siting and visual appearance of treatment works within the coastal zone.*
>
> *(2) The geographic limits of service areas within the coastal zone which are to be served by particular treatment works and the timing of the use of capacity of treatment works for those service areas to allow for phasing of development and use of facilities consistent with this division.*
>
> *(3) Development projections which determine the sizing of treatment works for providing service within the coastal zone.*
>
> *The commission shall make these determinations in accordance with the policies of this division and shall make its final determination on a permit application for a treatment work prior to the final approval by the State Water Resources Control Board for the funding of such treatment works. Except as specifically provided in this subdivision, the decisions of the State Water Resources Control Board relative to the construction of treatment works shall be final and binding upon the commission.*
>
> *(d) The commission shall provide or require reservations of sites for the construction of treatment works and points of discharge within the coastal zone adequate for the protection of coastal resources consistent with the provisions of this division…*

Section 30254 requires that new or expanded public works facilities be designed and limited to accommodate needs generated by levels of development permitted consistent with the Coastal Act. The purpose of the proposed project is to improve wastewater treatment and modify how treated wastewater is discharged in order to meet current NDPES permit requirements. The proposed project will not alter the geographic limits of the Loleta CSD's service area or increase service capacity. The Loleta CSD's service area boundaries are located entirely within the coastal zone and within the urban limit line established by the certified Humboldt County Local Coastal Program (LCP) around the community of Loleta.

As described in the Loleta CSD's 2016 Wastewater Facilities Plan, the WWTF has a design and permitted average dry and wet weather flow that can accommodate existing and projected demand in the service area. The facility's design average dry weather flow (ADWF) is 0.081 million gallons per day (MGD), while actual ADWF is currently approximately 0.05 MGD. The design average wet weather flow (AWWF) is 0.143 MGD, with actual AWWF is currently approximately 0.100 MGD (current flow data is based on analysis of the dry weather season data for September 2011 through April 2015). The projected ADWF for year 2040 is 0.062 MGD and the projected AWWF is 0.101 MGD. These projections fall within the design and permitted ADFW and AWWF of the facility. Projections are based on a historic 0.95% growth rate, but are also consistent with the maximum number of housing units and other development that could be developed in Loleta under Humboldt County's certified LCP given current zoning and physical constraints. Service extensions are limited by the certified LCP which includes by reference Coastal Act Section 30254.

Special Condition 5 reflects the existing requirements of the Coastal Act that changes to improvements and design of the wastewater treatment facility would require coastal development permit (CDP) authorization by the Commission. During the review of any such CDP application, the Commission would have the opportunity to ensure that any future changes would continue to match treatment facility capacity with the wastewater treatment needs generated by certified LCP development densities consistent with Section 30254 of the Coastal Act. Therefore, the Commission finds that the proposed project is consistent with Section 30254 of the Coastal Act.

Section 30254.5 places limitations on the Commission's ability to impose permit terms or conditions on the development of any sewage treatment plant which would prejudice or otherwise obviate the plant's ability to provide sewage treatment to any Coastal Act-consistent future development that the Commission determines could be accommodated by the plant. Section 30412 further restrains the Commission's actions with regard to water quality issues, especially the development of publicly-owned wastewater treatment works, prohibiting the Commission from taking actions that would be in conflict with the State or Regional Board's determinations and limiting the Commission's determinations on the development of such treatment works within the coastal zone to issues regarding: (1) the siting and visual appearance of the treatment works; (2) the geographic limits of service areas within the coastal zone which are to be served by particular treatment works and the timing of the use of capacity of treatment works for those service areas to allow for phasing of development and use of facilities consistent with the Coastal Act; and (3) development projections which determine the sizing of treatment works for providing service within the coastal zone.

The State and Regional Boards have direct and/or delegated authority to regulate the chemical and thermal characteristics of surface and groundwater resources, specifically in controlling the presence and concentrations of chemical constituents within the aqueous environment, in the interest of protecting human health, biological resources, and other "beneficial uses" of the waters of the state and the nation. The Commission acknowledges the distinctions in these responsibilities and limits its actions accordingly to preclude conflicts in instances where a water board has made determinations on a development project that is also subject to the Commission's authority, particularly with regard to the setting of quantitative limitations on point and non-point source pollutants through the issuance of National Pollution Discharge Elimination System (NPDES) Permits, waste discharge requirements, cease and desist directives, and cleanup and abatement orders.

The Loleta CSD's wastewater treatment and effluent discharge system is currently unable to meet the effluent requirements and terms of its NPDES permit, and the Regional Board has adopted a cease and desist order requiring the Loleta CSD to upgrade or replace the existing WWTF to achieve compliance with all limits set forth in the NPDES permit by December 31, 2019. The Commission's action to approve this CDP will authorize development involving improvements necessary to meet NPDES permit discharge requirements and comply with the Regional Board's cease and desist order. These improvements are facilitated by a grant from the State Board.

The Commission's consideration of the proposed development is: (1) undertaken pursuant solely to the authority duly granted to the Commission by the Coastal Act; (2) is limited to ensuring the

approved development's conformance with the policies of the Coastal Act in a manner consistent with the limitations contained in Sections 30254.5 and 30412; and (3) in no way represents actions which modify, supplant, condition, or otherwise conflict with a determination of either the state or any regional water quality control board in matters relating to water quality or the administration of water rights.

F. PERMIT AUTHORITY FOR REPAIR & MAINTENANCE

Section 30610 of the Coastal Act provides, in relevant part (emphasis added):

> *Notwithstanding any other provision of this division, no coastal development permit shall be required pursuant to this chapter for the following types of development and in the following areas: …*
>
> *(d) Repair or maintenance activities that do not result in an addition to, or enlargement or expansion of, the object of those repair or maintenance activities; provided, however, that if the commission determines that certain extraordinary methods of repair and maintenance involve a risk of substantial adverse environmental impact, it shall, by regulation, require that a permit be obtained pursuant to this chapter.*

Section 13252 of the Commission administrative regulations (14 CCR 13000 *et seq*.) provides, in relevant part (emphasis added):

> *(a) For purposes of Public Resources Code section 30610(d), the following extraordinary methods of repair and maintenance shall require a coastal development permit because they involve a risk of substantial adverse environmental impact:…*
>
> *(3) Any repair or maintenance to facilities or structures or work located in an environmentally sensitive habitat area, any sand area, within 50 feet of the edge of a coastal bluff or environmentally sensitive habitat area, or within 20 feet of coastal waters or streams that include:*
>
> *(A) The placement or removal, whether temporary or permanent, of rip-rap, rocks, sand or other beach materials or any other forms of solid materials;*
>
> *(B) The presence, whether temporary or permanent, of mechanized equipment or construction materials.*
>
> *All repair and maintenance activities governed by the above provisions shall be subject to the permit regulations promulgated pursuant to the Coastal Act, including but not limited to the regulations governing administrative and emergency permits. The provisions of this section shall not be applicable to methods of repair and maintenance undertaken by the ports listed in Public Resources Code section 30700 unless so provided elsewhere in these regulations. The provisions of this section shall not be applicable to those activities specifically described in the document entitled Repair, Maintenance and Utility Hookups, adopted by the Commission on September 5, 1978 unless a proposed*

activity will have a risk of substantial adverse impact on public access, environmentally sensitive habitat area, wetlands, or public views to the ocean.

(b) Unless destroyed by natural disaster, the replacement of 50 percent or more of a single family residence, seawall, revetment, bluff retaining wall, breakwater, groin or any other structure is not repair and maintenance under section 30610(d) but instead constitutes a replacement structure requiring a coastal development permit.

The proposed repairs to the existing treated wastewater discharge pipeline qualify as a repair and maintenance project under Section 30610(d) of the Coastal Act and Section 13252(b) of the Commission's regulations because the repairs (a) do not involve an addition to or enlargement or expansion of the subject pipeline, and (b) do not involve replacement of 50% or more of the entire pipeline. Approximately 40% of the pipeline length will be replaced in place (1,465 feet out of 3,700 feet).

Although certain types of repair projects are exempt from coastal development permit (CDP) requirements, Section 13252 of the Commission's regulations requires a CDP for extraordinary methods of repair and maintenance enumerated in the regulation. The proposed repair work involves repair and maintenance to a structure within 20 feet of coastal waters that includes the placement of solid materials and the use of mechanized equipment and construction materials, and therefore requires a CDP under CCR Section 13252(a)(3) of the Commission's regulations.

In considering a permit application for a repair or maintenance project pursuant to the above-cited authority, the Commission reviews whether the proposed method of repair or maintenance is consistent with the Chapter 3 policies of the Coastal Act. The Commission's evaluation of such repair and maintenance projects does not extend to an evaluation of the conformity with the Coastal Act of the existing development.

If not properly undertaken with appropriate mitigation, the necessary discharge pipeline maintenance activities could have adverse impacts on coastal resources, including impacts on the biological productivity and quality of surrounding wetlands, agricultural productivity, and archaeological resources. The findings in this report relating to the repair and maintenance of a structure within 20 feet of coastal waters discuss mitigation measures required as conditions of this CDP to ensure protection of coastal resources. Therefore, as conditioned in these findings, the Commission finds that the proposed method of repair and maintenance is consistent with all applicable Chapter 3 policies of the Coastal Act.

G. GEOLOGIC AND FLOOD HAZARDS

Section 30253 of the Coastal Act states, in applicable part:

New development shall do all of the following:

(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or

> *surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs…*

The proposed project entails development of critical infrastructure in an area subject to high geologic and flood hazards including strong earthquake shaking, liquefaction, differential settlement, tsunami inundation, and flooding. The 2016 Wastewater Facilities Plan adopted by the Loleta CSD included a preliminary hazard analysis for the proposed wastewater system improvements. This hazard analysis was incorporated into the 2017 Mitigated Negative Declaration (MND) and 2018 MND Addendum adopted for the project.

Seismic Hazards

Based on its record of historical earthquakes and its position near the Mendocino Triple Junction (the intersection of three crustal plates including the North American, Pacific, and Gorda plates), northwestern California is one of the most seismically active regions in the continental United States. The Humboldt Bay/Eel River Delta region, in particular, occupies a complex geologic environment characterized by very high rates of active tectonic deformation and seismicity.

An active segment of the Little Salmon fault zone is located less than 2.5 miles to the northeast of the project area along the northern boundary of the Eel River Delta. In addition to the Little Salmon fault zone, there are several other local sources capable of producing strong seismic shaking at the project site, including the Gorda plate, the Mendocino fault, the Mendocino triple junction, the northern end of the San Andreas fault, faults within the North American plate, and the Cascadia Subduction Zone (CSZ).

According to the hazard analysis prepared for the project, the project area is at low risk of surface fault rupture due to the absence of previously identified active faults crossing the project area, and the lack of geomorphic evidence indicating the possible presence of previously unmapped faults. However, a large earthquake on one of the active faults in the region outside of the project area has the potential to cause high intensity ground-shaking at the project site during the lifespan of the proposed development. Strong ground-shaking can also result in liquefaction, defined as the sudden loss of strength and fluid behavior of unconsolidated materials. The damaging effects of strong ground shaking and liquefaction can in turn cause large displacements of the ground surface, including heaving, cracking and buckling, and differential settlement. Liquefaction, vertical displacement, and other seismically-induced ground deformation have been documented in the Eel River Delta during several historic earthquakes, including the 1992 Petrolia earthquake (magnitude 7.1) and the 1906 great San Francisco earthquake (magnitude 7.9).

At the project site, the primary and secondary effects of strong ground shaking could damage, distort, or break foundations, pipelines, pumps, tanks, and other structures. At the WWTF, damage to structures could result in release of untreated or partially treated wastewater or biosolids that could significantly impact the biological productivity and quality of wetlands and coastal waters downslope of the facility, including the unnamed slough, Ropers Slough, and the Eel River. The resulting loss of functionality of the wastewater treatment system would also be devastating to the community of Loleta.

Certain sites are more susceptible than others to the secondary effects of strong ground shaking as a result of the character of the surface substrates and depth to groundwater. For example, loose, water-saturated granular sediments and unconsolidated, compressible materials have a greater susceptibility to liquefaction and differential settlement, respectively. The 2018 Wetland and Ordinary High Water Mark Delineation report prepared for the project includes information on the site's soil composition and depth to groundwater. Due to the location of the project near the mouth of the Eel River, the majority of the soils found across the area are alluvial, deposited by flood events from the Eel River. The agricultural fields containing the discharge pipeline and proposed irrigation force main include the Weott 110, Ferndale 220, and Canal School soil series, which are all fine-silty soils associated with alluvial plains. The upland portion of the WWTF parcel where the new treatment facility improvements are proposed is covered in historic fill to a minimum depth of 15 inches overlying Hookton Formation soils. This fill was likely placed in the 1950s when the facility was constructed.

The character of the surface substrates in the project area (fine silty-soils in the agricultural fields and uncharacterized fill at the location of the WWTF), and the relatively shallow depths to groundwater in the agricultural fields indicate the potential for liquefaction and differential settlement. Groundwater elevations depend on surface elevations and fluctuate seasonally. Wetland delineation sample points taken in November 2016 indicate that the northern segment of the discharge pipeline travels through wetlands with a depth to groundwater of 20-22 inches, and sample points taken in April 2018 indicate a depth to groundwater of 10.5-16 inches in the grazed wetlands at the land application site.

With respect to both the agricultural fields and the WWTF parcel, the hazard analysis submitted by the Applicant concludes:

> *Based on the geologic setting of the site, the nature (age, texture, and consistency) of earth materials underlying it, and our experience at similar sites around the Eel River Valley, it appears there would ordinarily be a low to moderate potential for liquefaction and other seismically-induced ground failures during all but the largest earthquakes. Under long-duration strong ground shaking associated with rare, great earthquakes (CSZ and San Andreas event, for example), the likelihood for liquefaction to occur would increase to a moderate to high potential. The materials most susceptible to liquefaction are the shallow and surficial, poorly consolidated flood plain deposits lying below the groundwater table. The older underlying Hookton Formation sediments, which are visible on the upland surfaces to the east of Eel River Drive, are too well consolidated and dense, to be susceptible to liquefaction. Hookton Formation sediments are projected to underlie the project site at an unknown depth likely to be in excess of several tens of feet. <u>On the basis of engineering judgment and our past experience with consolidation characteristics of youthful, saturated, low density fine-grained soils and non-cohesive granular soils, the consequence of liquefaction at this site will likely be dynamic areal settlement, on the order of several inches</u>.*[Emphasis added.]

The project description submitted by the Applicant (Exhibit 5) specifies the proposed irrigation force main's alignment, size (four inches in diameter), and depth (three feet below ground surface), but does not include information on the pipe material to be used or specifications on the pipe's joints and connection to the WWTF. The project engineer indicates that the pipe will be

high-density polyethylene (HDPE), or polyvinyl chloride (PVC) with restrained joints the entire length of the pipeline to reduce risk of damage during a seismic event (Chuck Swanson, personal communication, March 14, 2019). HDPE pipe is known to improve seismic resistance in pressure pipelines, as it is resistant to stretching, compression, and shearing forces associated with ground movement.

Similarly, the Applicant has not submitted any design or engineering plans for the proposed treatment facility improvements on the WWTF parcel, and has only submitted a general description of the proposed treatment system and a site map showing the general location of a number of the system's components including the new influent pump station, headworks, blower room, extended aeration package plant, and UV disinfection system (See Exhibit 4, page 3). The Applicant has also not provided any information on site preparation, including any necessary grading or filling, or on the design of foundations at the site.

The Commission acknowledges that the MND includes a mitigation measure requiring that (1) the proposed pipeline be designed to withstand differential settlement at hard connections at the WWTF and general liquefaction forces where crossing the adjacent floodplain; and (2) the proposed WWTF design incorporate a relatively strong, rigid foundation system to reduce the risk of damage associated with liquefaction-induced differential settlement.

This mitigation measure omits specific design recommendations for site preparation, structural fills, compaction standards, pavement subgrade preparation, or foundation design. In addition, no quantitative seismic standards are proposed. For example, the standard that the proposed pipeline be designed to withstand differential settlement does not indicate what amount of differential settlement the infrastructure should be designed to withstand.

In a filing letter dated October 26, 2018, Commission staff requested project plans demonstrating compliance with the proposed hazard mitigation measure. The Applicant's consultant responded, in a letter dated January 3, 2019, that the design phase of the project has not yet commenced because the Applicant is awaiting approval of design phase funding from the Clean Water State Revolving Fund. The Applicant's consultant also indicated that the location of the proposed WWTF elements may be adjusted to accommodate the proposed wetland setback and other design constraints.

Commission staff, including the staff geologist and engineer, have reviewed the preliminary analysis and recommend adherence to more detailed seismic standards, consistent with the California Building Code, demonstrating that the development is designed to minimize risks from seismic hazards. A site-specific, design-level geotechnical investigation and engineering analysis are necessary because although the site is outside any known fault zones, and the preliminary assessment of liquefaction hazard is low, the wastewater treatment system is critical infrastructure where structural damage or failure could have significant impacts on coastal resources.

Although nothing about the geologic hazards at this site suggest that existing technologies and seismic design elements couldn't be adapted for the local geologic setting, no specific design measures have been selected to address seismic hazards, and there has been no analysis to

demonstrate that the development's design will minimize risks from seismic hazards and assure the stability and structural integrity of the new development, as required under Section 30253 of the Coastal Act.

Therefore, in order to assure the stability and structural integrity of the proposed land application system pump and pipeline and WWTF improvements and minimize hazards related to seismic ground shaking, liquefaction and ground settlement, **Special Condition 1** requires the Permittee to submit, for the Executive Director's review and approval, a Seismic and Geotechnical Analysis and Hazard Mitigation Plan prepared by a licensed professional (Certified Engineering Geologist or Geotechnical Engineer). The condition requires (1) a site-specific geotechnical investigation for the project site evaluating ground shaking, liquefaction and seismic settlement hazards that is based on the California Building Code, including Section 1803; (2) an engineering analysis, specific to the project site, demonstrating that proposed structures will be designed and constructed to withstand expected levels of ground shaking, liquefaction, and ground settlement consistent with Sections 1897 and 1808 of the California Building Code; (3) detailed design and construction plans for the WWTF improvements and for the irrigation force main (including site plans and elevations, grading plans, foundation plans, and structural plans) incorporating the results of the required geotechnical investigation and engineering analysis; and (4) an Inspection and Maintenance Plan describing in detail the types and frequency of inspections and the procedures that will be followed to maintain the approved development in good working condition.

Special Condition 1 requires that the Seismic and Geotechnical Analysis and Hazard Mitigation Plan comply with criteria in the current California Building Code (e.g., CBC 2016) and American Society of Civil Engineer (e.g., ASCE 7-16) guidelines for conducting site-specific geotechnical investigation and designing for expected levels of ground shaking, liquefaction, and ground settlement. The CBC requires that all buildings, structures and non-structural components (e.g., architectural, mechanical, electrical and plumbing equipment) be designed and constructed to resist the effects of earthquake motions in accordance with design loads and other requirements contained in the ASCE 7-16 standards. CBC Section 1613 and ASCE 7-16 lay out specific procedures for determining seismic design criteria for different site classes (determined by soil properties) and structure/component risk categories based on probabilistic analysis of seismic loading (i.e., ground acceleration) for a specific location. The CBC mandates the use of USGS U.S. Seismic Design Maps for seismic design analysis. These standards will ensure that the proposed new development is are designed to withstand the amount of liquefaction and settlement resulting from site peak ground acceleration, earthquake magnitude and source characteristics consistent with the maximum considered earthquake ground motions at the site.

For the irrigation force main, the required investigation will result in the selection of pipe material, joints, and connections (pipe alignment, size, and depth has already been determined). Other than impacts on seismic risk, there are no potential coastal resource impacts resulting in the selection of one material over another. For the WWTF, the required investigation will result in selection of appropriate foundation types and depths and any necessary ground preparation such as compaction standards and fill material properties, slopes, and testing. The WWTF footprint as proposed is limited to an area of uplands covered in historic fill on the existing WWTF parcel. The WWTF parcel is located approximately 4.5 miles east of the Pacific Ocean

and a little over a mile north of the active channel of the Eel River so any necessary site fortification will not result in shoreline armoring or impact shoreline erosion or sand supply. Furthermore, any selected foundation and fill designs will be limited to the pre-existing disturbed upland footprint and therefore will not impact wetlands or other sensitive habitat. In addition, the footprint of the improved facility is limited to an approximately 10,535 square foot (0.24 acre) area that is depressed approximately six to fifteen feet below the adjacent public road and is directly adjacent to the developed town. Due to the small size of the facility, its lowered elevation, and its location at the urban/rural interface, any choice of foundation and fill design will not have a significant impact on views of the rural Eel River Delta from the public right of way or the character of the setting.

As conditioned, the Commission finds that the proposed project will minimize hazards and assure stability and structural integrity with respect to seismic ground shaking, liquefaction and ground settlement consistent with Section 30253 of the Coastal Act.

Existing discharge pipeline to be repaired

With respect to the existing discharge pipeline to be repaired, as previously discussed, in considering a permit application for a repair or maintenance project, the Commission reviews whether the proposed method of repair or maintenance is consistent with the Chapter 3 policies of the Coastal Act. The Commission's evaluation of such repair and maintenance projects does not extend to an evaluation of the conformity with the Coastal Act of the existing development. Therefore while the proposed repairs to the existing twelve-inch-diameter concrete discharge pipeline do not address the existing pipeline's risk with regards to seismic hazards, the proposed method of repair and maintenance does not create or contribute to that risk, and ultimately reduces risk through replacement of damaged pieces of pipe with new pipe.

Flood Hazards and Sea Level Rise

The proposed project is located in the seven-mile-long, 8,700-acre Eel River Delta. The Eel River is a storm-dominated system with over 90% of its annual runoff occurring from November to May, with average flows in January and February over 100 times greater than in August and September. Flooding during large winter storms periodically inundates the low-lying delta lands.

With the WWTF a little over one mile north of the active channel of the lower Eel River and approximately 4.5 miles east of the river mouth at the Pacific Ocean, the project site is located in the upper river delta where the Eel River is still subject to daily tidal influence but dominated by riverine influences and characterized by fresh water and/or brackish water into the summer. Ropers Slough, the tributary of the Eel River where the treated wastewater discharge pipe's outfall is located, is brackish in its lower region (1.2 miles) and fresh in its upper reaches (1.4 miles). The agricultural fields in the project area are protected from the upper reaches of Ropers Slough by a non-accredited, earthen levee.

The proposed repairs to the existing gravity-fed discharge pipeline and installation of a new force main for land application of treated wastewater are proposed on low-lying agricultural lands that are also predominately seasonal wetlands. These lands are within the mapped 100-year floodplain of the Eel River and within the tsunami inundation zone and thus at significant flood risk. See Exhibit 9 for a map of the floodplain in the project vicinity.

The WWTF is located on the edge of the Eel River Delta, elevated above the surrounding agricultural fields but below Eel River Drive and the community of Loleta, at approximately 18 to 24 feet in elevation.[5] The WWTF parcel is located just outside of the tsunami inundation zone at an elevation that precludes inundation by a tsunami. According to the Flood Insurance Rate Map for the area (Map Number 06023C1015G, revised June 21, 2017), the WWTF parcel straddles the boundary of the 100-year floodplain of the Eel River, with a portion of the facility within the AE Zone with a base flood elevation of 22-23 feet (NAVD88). As a result of the WWTF's location, there is a risk that a portion of the upgraded facility will be inundated with flood waters during times of flood, which could compromise the facility's functionality and threaten downstream people and properties by potentially sweeping up materials and/or releasing biosolids or untreated wastewater.

The MND adopted for the project identifies the presence of the mapped tsunami zone and floodplain but does not propose any mitigation measures for flood hazards. The MND indicates that because the existing discharge pipeline and new irrigation force main will be located underground, they will not be affected by flooding and they will not impact the flow or direction of floodwater. As for the WWTF, the Applicant proposes to comply with standards of development within the flood zone, and the MND assumes that the final design will involve elevating with earthen fill any portion of the upland site where structures would be placed to ensure the structures are located above the floodplain elevation. The Humboldt County local zoning code requires that structures be constructed with a floor area at an elevation of at least one foot above the base flood elevation (BFE). More specifically, for nonresidential construction, Humboldt County requires either (a) that the lowest floor be elevated to one foot above the BFE or (b) that the structure be flood proofed so that one foot above the BFE the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy [Section 335-5(a)(3)].

While the proposed elevation of the WWTF improvements above the BFE addresses current flood risk, the proposed elevation does not account for sea level rise over the life of the development. The Eel River Delta is vulnerable to sea level rise and increasing storm intensity associated with projected climate change, and as a result, is likely to experience more frequent and intense flooding episodes and an expansion of the 100-year floodplain over time. Flooding in the Eel River Delta is enhanced when river crest timing is coincident with high tides. For example, according to the National Weather Service's description of flood impacts, when the Eel River crests at fifteen feet at the Fernbridge tide gauge (approximately one mile inland of the project site), minor flooding in the Eel River Delta is likely during ocean tides of six feet or greater; and with a river crest of thirteen feet, minor flooding is likely during ocean tides of 7.5 feet or greater.[6] Higher tides associated with sea level rise will further impair the drainage of the

[5] Elevations are based on Google Earth imagery (BGS84).

[6] The current mean monthly maximum water (MMMW) elevation on Humboldt Bay is 7.74 feet (NAVD 88 as measured at NOAA's North Spit Tide Gage). Extreme tides (100-year events) and king tides and/or storm surges can reach up to two feet above the tidal baseline elevation.

Eel River, as well as the tributaries and stormwater runoff that discharge to the river, thereby increasing backwater flooding on lands adjacent to the river and its tributaries and upstream.

As described above, the project area has a shallow groundwater table. Sea level rise may cause rises in the groundwater table leading to potential groundwater emergence above the ground surface and inundation of low-lying areas. Increased water levels at the gravity-fed discharge pipeline's outfall could impair drainage, and rising groundwater could result in greater inflow and infiltration of water into the pipeline, resulting in reduced capacity and potential backups of treated wastewater. Increasingly long periods of ground saturation could also result in settlement or movement and possibly floating of the treated wastewater pipeline. In addition, any emergent groundwater will make access and maintenance of utility infrastructure difficult.

The State of California has undertaken significant research to understand how much sea level rise to expect over this century and to anticipate the likely impacts of such sea level rise. In April 2017, a working group of the Ocean Protection Council's (OPC) Science Advisory Team released *Rising Seas in California: An Update on Sea-Level Rise Science*. This report synthesizes recent evolving research on sea level rise science, notably including a discussion of probabilistic sea level rise projections as well as the potential for rapid ice loss leading to extreme sea level rise. This science synthesis was integrated into the OPC's *State of California Sea-Level Rise Guidance 2018 Update*. This Guidance document provides high-level, statewide recommendations for state agencies and other stakeholders to follow when analyzing sea level rise. Notably, it provides a set of projections that OPC recommends using when assessing potential sea level rise vulnerabilities for various projects. Taken together, the Rising Seas science report and updated State Guidance account for the current best available science on sea level rise for the State of California.

The OPC Guidance provides sea level rise projections for twelve California tide gauges, and recommends using the projections from the tide gauge closest to the project site. In this case, the North Spit tide gauge in Humboldt Bay is the closest gauge. The following table depicts the projected sea level rise at the North Spit under low-risk, medium-high risk, and extreme risk aversion scenarios.

Projected Sea Level Rise (in feet)			
	Low Risk Aversion	Medium-High Risk Aversion	Extreme Risk Aversion
2040	1.1	1.6	2.0
2050	1.5	2.3	3.1
2100	3.1-4.1	6.3-7.6	10.9

The Humboldt Bay-Eel River region is experiencing the greatest rate of relative sea level rise in the State due to active subsidence as the result of both seismic activity and compaction of former tidelands.[7] The sea level rise projections for the North Spit tide gauge account for regional seismic subsidence.

[7] Extensive tidal reclamation and construction of dikes and levees occurred in the Eel River Delta in the latter 1800s and early 1900s. As a result of the loss of sediment accretion from daily tidal inundation coupled with compaction of the land as organic material has decomposed, the diked former tidelands have lost one to three feet of elevation in

The appropriate time horizon to use to evaluate sea level rise depends on the anticipated duration of development, after which such development is expected to be removed, replaced or redeveloped. The proposed improvements to the wastewater treatment system have been designed based on projected wastewater flows through 2040. Given that the current investments are intended to serve the community through 2040, it is essential that the upgraded WWTF provide flood proofing for anticipated floods over the next twenty years. The OPC Guidance recommends using probabilistic projections based on a high emissions scenario in the near-term, as we are currently on a high emissions trajectory through 2050. Based on a high-emissions trajectory, there is a 27.2% chance of one foot of sea level rise by 2040 and a 76% chance of one foot of sea level rise by 2050; and a 0.1% and 1.4% chance of two feet of sea level rise by 2040 and 2050, respectively (at the North Spit tide gauge in Humboldt Bay). Given the significant risk of public health, safety, and environmental impacts if flooding affects the functionality of the wastewater treatment system and/or results in sewage discharge into wetlands and coastal waters, the use of a higher risk aversion projection is appropriate in this case.

Thus to account for potential sea level rise and future flood flows through the design life of the WWTF improvements (i.e. through 2040), **Special Condition 2** requires the new WWTF improvements to be designed to be safe from flooding to two feet above the 100-year base flood elevation, consistent with the extreme risk aversion sea level rise projection for 2040. The WWTF is located at the upper edge of the broad, flat Eel River Delta, 4.5 miles for the coast. Two feet of sea level rise at the coast will result in less than two feet of elevation of the floodplain at the project site. However, the Applicant has not provided an analysis of how future sea level rise at the coast will affect the floodplain's elevation and extent at the project site, so there is no basis for selecting a lower elevation than the maximum projected. Given that the WWTF improvements comprise critical infrastructure serving the public where flooding could have significant coastal resource consequences, and the Applicant chose not to provide an analysis that takes into account sea level rise, planning for the extreme risk or worst case scenario conforms with both the Coastal Act requirement to minimize flooding risks and the OPC's sea level rise guidance.

Further, while uncertainty will remain with regard to exactly how much sea levels will rise and when, the worsening direction of sea level change is clear and it is critical to continue to assess sea level rise vulnerabilities when planning for future development, especially critical infrastructure serving the public.

The requirement that the WWTF improvements be safe from flooding to two feet above the 100-year base flood elevation to account for potential sea level rise through 2040 does not prescribe specific measures for elevating and/or flood-proofing the facility. In the present case where backwater flooding during 100-year flood events is the concern, the proposed development has more adaptive capacity than beachfront or blufftop developments where choices of flood hazard mitigation measures such as armoring the shoreline result in impacts to shoreline sand supply, public access, and other coastal resources. The subject facility could be flood-proofed to two feet above the BFE by: (a) further elevating the upland site by placing additional earthen fill; (b)

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the last century. With respect to seismic subsidence, the Eel River occupies a subsiding syncline that is subsiding by an average of one to three millimeters per year.

pouring a thicker foundation; (c) constructing small barrier walls; (d) elevating building pads; and/or (e) elevating or encasing equipment. As discussed in the section on seismic hazards, the WWTF parcel is located approximately 4.5 miles east of the Pacific Ocean and a little over a mile north of the active channel of the Eel River so any necessary site fortification will not result in shoreline or river armoring or impact shoreline or river erosion or sediment supply. Furthermore, necessary flood-proofing measures will also be limited to the pre-existing disturbed upland footprint of the WWTF parcel and therefore will not impact wetlands or agricultural lands. In addition, the proposed WWTF footprint is depressed below the adjacent public road. Due to the small size of the facility (less than one quarter acre in size) and given the adjacent public road's elevation of approximately 28-38 feet, elevating the building pad and/or structures at the facility to two feet above the BFE (i.e. to 24-25 feet) will not impact views from the public right of way. Finally, due to the facility's location at the inland extent of the floodplain, the width of the floodplain at this location, and the small area of the site, the improvements will not significantly alter the flow pattern of flood waters and will not create a barrier to floodwaters or effectively raise the flood elevation.

The Commission finds that the proposed improvements are needed in the *immediate* term, and the two feet of elevation above the BFE required by Special Condition 2 ensures the WWTF improvements are sufficiently elevated to minimize the risk of flooding associated with sea level rise and future storm flows through 2040, the end of the design life of the proposed development. As conditioned, the Commission finds that the proposed improvements will minimize flood hazard risks to the WWTF through 2040 consistent with Section 30253 of the Coastal Act.

However, the need for a viable wastewater treatment system will continue beyond 2040. Absent an analysis of flood hazards at the site beyond 2040 taking into account projected sea level rise, evidence is lacking to conclude that approved development will minimize flood hazards to the WWTF beyond 2040 consistent with Section 30253(a) of the Coastal Act. The Commission therefore believes that a 20-year authorization period is appropriate in this case. This authorization term is tied to the design life of the facility improvements and the required flood proofing which ensures safety through 2040 under even the worst-case-scenario sea level rise projections. Thus, **Special Condition 3** authorizes the proposed improvements on a *temporary* basis for twenty years to allow for the continued operation and function of the wastewater treatment system, including to presently protect water quality and public health, while simultaneously allowing time to plan for future coastal hazard risks.

Special Condition 3 specifies that prior to the expiration of the authorization period, the Permittee or its successors shall submit to the Commission an application for a coastal development permit amendment to either (a) remove the approved development in its entirety, or (b) extend the length of time the approved development is authorized and modify its design as needed to ensure consistency with the Coastal Act. Special Condition 3 also requires the permit amendment application to include a Coastal Hazards Analysis and Adaptation Plan that provides a clear long-term plan to ensure that the WWTF improvements minimize flood hazard risks to the WWTF as well as protect coastal resources over the long-term (through at least 2100).

Pursuant to Special Condition 3, the plan must be informed by a geotechnical analysis of current and future coastal hazards including flood hazards and hazards caused by elevated groundwater

and reduced or inadequate drainage, taking into account local sea level rise and seismic and aseismic subsidence through at least 2100, considering medium-high risk aversion and extreme risk aversion scenarios, and based on the best available science at the time of plan preparation. Pursuant to Special Condition 3, the plan must also include an alternatives analysis to address any coastal hazard vulnerabilities identified, including but not limited to alternatives involving relocation of the WWTF to an area safe from flooding and other coastal hazards or development of a new system for wastewater treatment and/or treated wastewater disposal/reuse (including consolidation with other nearby facilities).

Given that the WWTF improvements comprise critical infrastructure serving the public where flooding could have significant coastal resource consequences, it is critical to coordinate the shorter-term development authorization with the longer-term effort in order to identify a viable wastewater treatment system in the long-term. The OPC Guidance and Coastal Commission Guidance recommend that applicants understand the risks associated with higher sea level rise projections and develop adaptation pathways for those higher scenarios, even if projects are initially designed for lower projections. Special Condition 3 requires the Applicant to analyze and plan for longer-term, higher-projection risks consistent with OPC guidance. With these conditions in place, the proposed development will minimize flooding risk and protect coastal resources consistent with the requirements of the Coastal Act.

Finally, considering the aforementioned hazards, the Commission also attaches **Special Condition 4**, which requires the Permittee to assume the risks of flooding and geologic hazards to the property and waive any claim of liability on the part of the Commission. Given that the Permittee has chosen to implement the project despite flooding and geologic risks, the Permittee must assume the risks. Special Condition 4 notifies the Permittee that the Commission is not liable for damage as a result of approving the permit for development. The condition also requires the Permittee to indemnify the Commission in the event that third parties bring an action against the Commission as a result of the failure of the development to withstand the hazards. For all of the above reasons, the Commission finds that as conditioned, the project will minimize risks to life and property from flood hazards and is consistent with Section 30253 of the Coastal Act.

Therefore, the Commission finds that the proposed project, as conditioned, will minimize risk to life and property from hazards, consistent with section 30253(a) of the Coastal Act.

H. WETLAND FILL & PROTECTION OF COASTAL WATERS

Section 30230 of the Coastal Act states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of wastewater discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with the surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Section 30233 of the Coastal Act provides, in applicable part, as follows (emphasis added):

> *(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> *(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
>
> *(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*
>
> *(3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*
>
> *(4) Incidental public service purposes, including, but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*
>
> *(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*
>
> *(6) Restoration purposes.*
>
> *(7) Nature study, aquaculture, or similar resource dependent activities.*
>
> *(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.*
>
> *(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary…*

Coastal Act Section 30108.2 defines "fill" as "*earth or any other substance or material, including pilings placed for the purposes of erecting structures thereon, placed in a submerged area*." Wetland delineation field investigations for the subject project were performed in November 2016, May 2017, June 2017, and April 2018, and a wetland delineation report was prepared in 2018 to address the final proposed project (SHN, August 2018). The results of the wetland delineations are described below. In total, the proposed discharge pipeline repair and new irrigation force main installation will entail temporary impacts to approximately 65,088 square feet (1.49 acres) of grazed wetlands. See Exhibit 7 for a map of temporary wetland impacts.

(1) Wastewater treatment facility improvements. The existing developed footprint of the WWTF and the undeveloped area on the southeast portion of the parcel where the facility expansion is proposed are uplands associated with historic fill. The remainder of the parcel is covered in wetlands associated with a drainage ditch that runs along the southern boundary of the parcel. The Applicant proposes to locate all development at the WWTF including all ground disturbing activities a minimum of five feet from all coastal wetlands to avoid wetland fill. This limitation on wetland fill is included in **Special Condition 2**.

(2) Repairs to the existing discharge pipeline. The agricultural fields crossed by the existing buried treated wastewater discharge pipeline predominantly qualify as wetlands. The repairs to the existing pipeline will result in only temporary construction impacts to approximately 33,172 square feet (0.76 acres) of grazed wetlands while the trenches are excavated for pipeline repairs. The trenches will be backfilled and the ground recontoured and vegetated to existing conditions upon completion. Riparian woodland along the slough remnant wetland and near the discharge pipe outfall location will be avoided. The proposed new manhole to be installed within the existing discharge pipe alignment is proposed in uplands so that no permanent wetland impact will result from its installation.

(3) Installation of a new irrigation force main. The agricultural field where the land application system is proposed consists entirely of wetlands. The installation of the new force main will result in only temporary impacts to 31,916 square feet (0.73 acres) of wetlands during trenching operations.

Section 30233 of the Coastal Act limits the fill of wetlands to specific, enumerated uses, and also requires that any project which results in fill of wetlands (a) be the least environmentally damaging feasible alternative, and (b) provide feasible mitigation measures to minimize adverse environmental effects. In addition, Coastal Act Sections 30230, 30231, and 30233 together require that marine resources, the biological productivity and quality of coastal waters, and the functional capacity of wetlands and estuaries be maintained and enhanced.

Allowable use

As mentioned above, any proposed filling, diking, or dredging in wetlands must be for one of the seven allowable uses listed under Section 30233(a) of the Coastal Act. This limitation does not apply to repair of the existing discharge pipeline, which is one of the project components that involves wetland fill. In considering a permit application for a repair or maintenance project, the Commission reviews whether the proposed method of repair or maintenance is consistent with

the Chapter 3 policies of the Coastal Act. The Commission's evaluation of such repair and maintenance projects does not extend to an evaluation of the existing development's conformity with the Coastal Act.

The limitations of Section 30233(a) on the allowable use for wetland fill do apply to the proposed excavation and fill in wetlands to install the force main with vertical risers to allow treated wastewater to be used to irrigate agricultural fields instead of being discharged to a wetland tributary of the Eel River during times when such discharge is prohibited by the wastewater treatment system's NPDES permit.

The proposed excavation and fill in wetlands to install a land application system for treated wastewater is allowable under Section 30233(a)(4) of the Coastal Act as an "incidental public service purpose." First, the proposed fill is being undertaken by a public agency to serve the public, and therefore has a public service purpose. The proposed fill is also incidental to the primary service provided overall by the existing wastewater treatment system. The proposed fill in wetlands only modifies the location and method of treated wastewater discharge of the existing wastewater treatment system and does not increase service capacity or expand service to areas not already served by the existing system. Furthermore, the project constitutes burying pipe, which is an activity specifically listed in Section 30233(a)(4) as an incidental public service purpose for which filling and dredging in wetlands is allowed.

Therefore, the Commission finds that for the reasons discussed above, the dredging (excavation) and filling for the proposed project is for an incidental public service purpose, and thus, is an allowable use pursuant to Section 30233(a)(4) of the Coastal Act.

Alternatives for the repair of the discharge pipeline and the installation of the new land application system

For projects involving diking, dredging, and filling of wetlands, the Commission must ensure that the proposed project has no feasible less environmentally damaging alternative consistent with Section 30233 of the Coastal Act. Coastal Act Section 30108 defines "feasible" as "*…capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors*." Alternatives for both the proposed existing discharge pipe repair and new land application system installation include (1) the "no project" alternative; and (2) alternative construction locations and methods. Alternatives for the new land application system installation also include (3) alternative siting or alignment of the land application system; and (4) alternative systems for treated wastewater use or disposal.

<u>No project alternative</u>

The "no project" alternative means that no repairs or improvements would be made to the existing treated wastewater discharge system, which would continue to violate NPDES permit discharge requirements. Violation of these requirements would result in continued and cumulative water quality impacts to the Eel River and associated wetlands as well as adverse impacts to sensitive fish species and other biological resources. Therefore, the no project alternative is not a feasible less environmentally damaging alternative to the proposed project, as conditioned.

Alternative construction locations and methods

The Applicant proposes trenchless pipe repair methods for the approximately 240-foot-long section of the existing discharge pipeline located under a remnant slough (using a fold-and-form trenchless repair method), but otherwise proposes open trenching in grazed wetlands in order to replace existing segments of pipe and install new pipe.

Horizontal directional drilling is an alternative method that can be used to replace existing segments of pipe or install new pipe without trenching. This method could be considered for use for either the repairs to the existing discharge pipeline or the installation of the new pipeline for the land based application system. However, horizontal directional drilling methods typically are not used for shallow applications in open fields due to the potential of "surfacing" of drilling fluids that could occur with shallow and horizontal directional drilling depths.

Originally the Applicant proposed to repair existing discharge pipeline using a trenchless method called cured-in-place pipe (CIPP). This method lines the existing pipe by pulling or inverting a resin soaked fiber cloth through the original pipe. As the resin hardens, the liner matches the shape and slope of the original pipe while sealing out cracks, breaks, and leaking joints in the original pipe. However, this technology was rejected by the Regional Board due to concerns about toxicity.

The fold-and-form trenchless repair method that is now proposed for the segment of pipe to be repaired under the remnant slough does not require the use of chemical additives. Fold-and-form trenchless pipe repair involves the use of polyvinyl chloride (PVC) pipe manufactured as a flexible sleeve which is wound around spools. The flexible PVC liner is heated to increase flexibility, pulled through the existing host pipe, sealed at either end, and injected with steam to cure the pipe as it conforms to the inside of the host pipe. However, the fold-and-form trenchless methods can only be used where the existing pipeline is still structurally sound. The method would not be effective for sections of the existing discharge pipeline with greater structural failure. In addition, the trenchless method would not necessarily result in less environmental impact to the grazed seasonal wetlands then trenching as proposed and conditioned. The existing vegetation located in the pipe alignment that would be disturbed by trenching is predominately non-native pasture grass (less than 16% of the species observed in the subject pasture land during field surveys were native) and no special status plant species were detected during seasonally-appropriate botanical surveys. As a result, very little native wetland vegetation will be disturbed. In addition, the subject wetlands are seasonal wet and all soil disturbance is proposed for the dry season (May 15th – September 30th). The Applicant proposes to return the topsoil and reseed the pasture immediately following construction, and the type of herbaceous vegetation affected will quickly regrow in the area's wet climate. The proposed seasonal work window and reuse and reseeding of the topsoil are required as part of **Special Condition 7**. Both trenching and trenchless methodologies would require the same level of heavy equipment and material staging and access.

The Applicant has provided an alternatives analysis that indicates that the proposed area of trenching is the minimum feasible area. The discharge pipeline was inspected using closed circuit television to identify all portions of the pipeline with sufficient remaining life that do not

need to be replaced to minimize the length of trenching required. The proposed trench width of three feet is necessary considering the depths of excavation ranging from 2.5 feet to thirteen feet, the discharge pipe diameter of one foot, and the need for trench shoring in deeper areas. To ensure the area of construction disturbance is minimized, as proposed by the Applicant and required by **Special Condition 7**, prior to the commencement of construction, the limits of the approved work areas will be physically delineated, limiting the potential area affected by construction; and workers will be educated about the limitations on construction. As further proposed by the Applicant and required by **Special Condition 7**, during construction, all vehicles and equipment will be restricted to pre-established work areas and access routes, as shown in Exhibit 4, page 2.

As a result, the use of alternative construction locations and methods is not a feasible less environmentally damaging alternative to the proposed development as conditioned.

Alternative siting or alignment of the proposed new land application system

The proposed new subsurface force main with risers will be used to irrigate 47 acres of grazed seasonal wetlands directly north of the WWTF. The entire 47 acres has been delineated as wetlands so there is no alternative alignment of the pipe within the field that would reduce wetland impacts. It is also not feasible to relocate this proposed land application system to an upland agricultural field to avoid wetland impacts. According to the National Wetland Inventory mapping prepared by US Fish and Wildlife Service, the vast majority of the agricultural bottomlands surrounding Loleta are wetlands, except potentially for some fields south of Loleta near Eel River Drive (See Exhibit 10). However, these fields are much farther from the WWTF requiring significantly more ground disturbance for construction of a longer pipeline which would still need to be routed through wetlands, requiring at least as much wetland disturbance as the proposed development. Furthermore, the Loleta CSD was unable to reach an acceptable lease agreement with the owners of other nearby agricultural land.[8] Therefore, alternative alignment or siting of the land application system is not a feasible less environmentally damaging alternative to the proposed development as conditioned.

Alternative system for treated wastewater use or disposal

A Wastewater Facilities Plan was prepared for the Loleta CSD by SHN Engineers & Geologists in 2016 to evaluate alternatives for the District's wastewater collection, treatment, and disposal facilities through 2040 to meet NPDES permit requirements. Alternative treated wastewater disposal methods involving different locations include (1) land disposal of wastewater (vs. use for irrigation at agronomic rates); (2) municipal reuse; and (3) consolidation with other nearby wastewater treatment facilities' disposal systems.

(1) Land disposal: Instead of using treated wastewater to irrigate agricultural land at agronomic rates, the Applicant could discharge larger volumes of wastewater across a smaller area of land through irrigation, percolation ponds, injection wells, or infiltration trenches, resulting in a smaller area of wetland impacts. This direct discharge to soil

[8] As part of the Loleta CSD's facilities planning process, a landowner outreach effort was undertaken to identify potential land application areas in Loleta that may be available for lease or purchase for wastewater reclamation. Two other agricultural landowners additionally expressed interest, and the original project involved a different property farther from the WWTF, but an acceptable lease agreement could not be reached.

and groundwater is known as land disposal. However, land disposal would not support continued grazing and thus would convert agricultural land to non-agricultural uses, inconsistent with the agricultural conversion policies of the Coastal Act. Land disposal is therefore not a feasible less environmentally damaging alternative to the proposed development as conditioned.

(2) Municipal reuse: Instead of using treated wastewater to irrigate agricultural lands, the Applicant could build a pipe transmission and distribution system to pump treated wastewater into town for use at public facilities, including irrigation of the Loleta school field and use for flushing toilets and urinals. However, the school field is only approximately two acres in size and would provide less than 10% of the land required for reclamation of effluent during the dry season, and there are limited public buildings in Loleta where the reclaimed water could be used in restrooms (the school, the Loleta CSD office, and the fire hall). Therefore, this alternative would not be able to accommodate the amount of treated wastewater necessary to comply with NPDES permit discharge requirements and is thus not a feasible less environmentally damaging alternative to the proposed development as conditioned.

(3) Consolidation with other nearby facilities: There are four other permitted NPDES dischargers located within the general vicinity of the Loleta WWTF: Humboldt Creamery, College of the Redwoods, City of Fortuna, and Bear River Rancheria. The Loleta CSD outreached to all four about consolidation, but the Creamery, College, and Rancheria were not interested. The City of Fortuna considered consolidation, but the necessary improvements would have been cost prohibitive. The City of Fortuna discharges to Strongs Creek, a tributary to the Eel River, during the wet season, and discharges to three percolation ponds located adjacent to the Eel River during the dry season. It is estimated that consolidation with Fortuna would cost over seven times the amount that the proposed land application system would cost. Therefore, consolidation with other nearby wastewater treatment facilities' disposal systems is not a feasible less environmentally damaging alternative to the proposed development as conditioned.

Based on the above alternatives analysis, the Commission concludes that there are no feasible less environmentally damaging alternatives to the proposed development as conditioned.

Feasible Mitigation Measures

Section 30233 further requires that feasible mitigation measures be provided to minimize adverse environmental effects. Depending on the manner in which the proposed project is conducted, the significant adverse impacts of the project may include (1) construction-related impacts to water quality and aquatic habitat from sediment, pollutants, or debris from construction activities entering coastal waters; (2) excavation/fill impacts in grazed seasonal wetlands; (3) impacts to nesting birds; (4) impacts to northern red-legged frogs; (5) and impacts on water quality from post-construction stormwater runoff.

1. Construction-related impacts to coastal waters and aquatic habitat

Although the primary purpose for the project is to protect and improve water quality by improving the treatment capabilities and discharge regime of the wastewater treatment system, water quality impacts could occur during the physical construction of the facility improvements.

The proposed project involves ground disturbance, paving, and the use of heavy equipment that could result in sediment, debris, or hazardous materials entering coastal waters and impacting sensitive fish species and their habitat. To protect the biological productivity and quality of coastal waters, the Loleta CSD proposes a number of erosion and sediment control and pollution prevention measures during project construction including: (1) limiting construction in agricultural fields to the dry season; (2) covering and securing all onsite stockpiles of soil, gravel, and construction debris before the onset of precipitation if rainfall is forecasted; (3) removing all silt and debris from the construction area and stormwater controls after a rainstorm; (4) containing onsite stockpiles of soil and construction debris at all times and prohibiting the temporary placement or storage of material where it may be subject to entering the Eel River or other jurisdictional waters of the U.S. or State; (5) removing all trash and debris from the work site and disposing of all trash and debris at an appropriately permitted upland disposal facility within ten days of project completion or prior to the onset of the rainy season, whichever is earlier; (6) employing best management practices (BMPs) for concrete paving and grinding operations and storm drain inlet protection to prevent concrete grindings, concrete slurry, and paving rinseate from entering drop inlets or sheet-flowing into coastal waters; (7) keeping all equipment free of oil and fuel leaks; (8) maintaining hazardous materials management equipment immediately on hand at the project site; and (9) ensuring a registered first-response, professional, hazardous materials clean-up/remediation service is locally available on call. The Applicant also proposes to restrict all vehicle and equipment to pre-established work areas and access routes and to physically delineate the limits of approved work areas and educate workers about the limits prior to the commencement of construction. To ensure that the Applicant implements the erosion and sediment control plan as proposed, **Special Condition 7** requires that the proposed construction-phase BMPs be implemented. Because the Applicant has not proposed any seasonal limitation on work on the WWTF parcel, Special Condition 7 also specifies that all ground-disturbing activities and asphaltic-concrete paving operations shall occur during periods of dry weather only.

The water quality BMPs proposed by the Applicant lack specificity as to the location and timing of measures to be employed. Therefore, the Commission also attaches **Special Condition 8** requiring that a final erosion and sediment control and pollution prevention plan be submitted for the review and approval of the Executive Director that includes; (a) a construction site map identifying the location of all temporary construction-phase BMPs proposed and required by Special Condition 7; (b) a narrative description of the BMPs to be implemented; and (c) a schedule for the management of all BMPs.

Finally, although the Applicant has proposed to dispose of all trash and debris at an appropriately permitted upland disposal facility, the Applicant has not identified a feasible disposal location. Therefore, the Commission attaches Special Condition 9 requiring the Permittee to submit a final debris disposal plan prior to commencement of construction for the Executive Director's review and approval.

In conclusion, the special conditions discussed above minimize adverse impacts to water quality and do not conflict with any determination by the State Water Resources Control Board or any California Regional Water Quality Control Board determination in matters relating to water quality as required by Section 30412 of the Coastal Act. As conditioned to require (a) submittal

and implementation of final plans for erosion and sediment control and pollution prevent and debris disposal and (b) adherence to various construction responsibilities, the Commission finds that the project provides feasible mitigation measures to minimize the project's potential water quality impacts, as required by Sections 30230, 30231, and 30233 of the Coastal Act.

2. Excavation/fill impacts in grazed seasonal wetlands

As described above, the proposed discharge pipeline repair and new irrigation force main installation will entail temporary impacts to approximately 65,088 square feet (1.49 acres) of grazed wetlands. Trenching to replace segments of the existing discharge pipeline will involve a two-to-four-foot trench width, with excavated soil from the trenches placed within twenty-two feet of the discharge pipeline centerline, and disturbance limited to a twenty-five foot area. Trenching to install the new irrigation force main will involve a three-foot-wide trench, with excavated soil from the trenches placed within twelve feet of the new pipeline, and disturbance limited to a fifteen-foot-wide area around the pipeline.

Due to its low elevation, the project area is subject to seasonal ponding from rain and runoff and also has a high groundwater table. The wetland vegetation on the site is not particularly abundant or diverse in comparison with other wetland habitats within the Eel River Delta because of its current and historic use as pasture for cattle grazing. Nonetheless, the area does provide some wetland habitat including foraging habitat for a diversity of water-associated wildlife including waterfowl, wading birds, and shorebirds. The wetlands also function to maintain the flood capacity of the Eel River Delta and to provide a certain degree of water quality protection, as they temporarily detain rainwater runoff and allow for the removal of impurities entrained in stormwater flowing over the pasture lands.

The Loleta CSD proposes to restore all grazed seasonal wetlands disturbed by project construction to pre-project conditions, except for the wetland area displaced by five four-inch diameter risers attached to the new subsurface irrigation force main, which would be permanent features covering a total of less than one-half square foot of area. The proposed restoration of wetlands includes recontouring and decompacting the site as necessary, restoring the original topsoil as the top fill material in the restored trench sections, and replanting the affected areas with a commercially prepared seed mixture composed of the same forage species that are currently present in the grassland. **Special Condition 7** requires that these mitigation measures be implemented as proposed. To ensure that the revegetation does not result in the propagation of invasive plant species, Special Condition 7 also requires that only a mix of regionally appropriate native grasses and/or noninvasive agricultural species be planted, and no problematic or invasive plant species or noxious weeds shall be utilized.

After pipe segments are installed or replaced, most of the excavated subsoil material removed during trenching would be replaced within the trenches. However, there will be some excess soil material that would be broadcast across the construction corridors, resulting a layer less than one inch thick. The land surface elevation along the trench at the completion of construction would be approximately the same as the land surface elevation prior to construction, which would maintain the existing hydrological functions of the wetlands. The Commission finds that if the material is not graded and scarified properly, variations in the topography and elevation of the construction corridors could occur relative to the adjacent wetlands that may result in alterations

to the hydrology of the seasonal grazed wetlands. These wetlands are essentially flat and are largely fed through a high groundwater table and seasonal rainfall. Depressions, mounds, or ridges could result in changes to water runoff and retention if graded improperly. Therefore, to ensure that the hydrology of the seasonal grazed wetlands is maintained, **Special Condition 7** includes a requirement that a qualified engineer be on site during final grading and recontouring activities to ensure that the construction corridors are graded and recontoured consistent with the elevation of the adjacent grazed seasonal wetlands and that no depressions, ridges, or mounds result.

To ensure that the construction area through the seasonal wetlands is revegetated to pre-project conditions as proposed, **Special Condition 10** requires that the Loleta CSD submit a monitoring report to the Executive Director within 18 months following completion of construction of repairs to the existing discharge pipeline and installation of the new irrigation force main with vertical risers in agricultural fields. The monitoring report must be prepared by a qualified biologist or botanist and must evaluate whether the objective of reestablishing vegetation in areas of project construction to a level of coverage and density equivalent to vegetation coverage and density of surrounding undisturbed areas has been achieved. If the report indicates that the revegetation of the disturbed areas following reseeding has not been successful, in part, or in whole, the Loleta CSD is required to submit for the review and approval of the Executive Director a revised reseeding program to achieve the objective.

As conditioned, the Commission finds that the proposed project provides feasible mitigation measures to minimize the project's potential adverse effects on grazed seasonal wetlands consistent with Section 30233 of the Coastal Act.

3. Impacts to nesting birds

The proposed project will minimize impacts to nesting birds. The development will avoid riparian and wooded areas, no trees will be removed, and only limited vegetation removal is proposed at the WWTF parcel and within the irrigation force main and discharge pipe alignments. There may be some noise-related disturbance associated with the construction of the project; however, proposed construction noise impacts are comparable to existing ongoing agricultural operations in the project area (including haying, disking, plowing, and irrigation).

While no work in riparian habitat is proposed, work is proposed to occur at manholes eight and ten, directly adjacent to riparian vegetation associated with the slough remnant wetland (See Exhibit 4, page 4). Construction is proposed to occur up to the edge of the riparian canopy, and could disturb adjacent nesting birds. In addition, construction activities at the WWTF will occur directly adjacent to a Himalayan blackberry thicket that also provides potential nesting habitat and would likely disturb any birds nesting at that location. Work at the discharge pipe outfall will remain at least 50 feet from the edge of riparian vegetation canopy associated with the wetland tributary of the Eel River.

The project description (Exhibit 5) includes a mitigation measure that specifies that if vegetation removal or ground-disturbing activity is to take place during the nesting season (February 15th to August 15th for most birds), a qualified biologist will conduct a pre-construction nesting bird survey. Preconstruction surveys for nesting pairs, nests, and eggs would occur within the

construction limits and within 100 feet (200 feet for raptors) of the construction limits within five days of the commencement of construction. If active nests are encountered, species-specific measures would be prepared by a qualified biologist in consultation with the USFWS and CDFW, and implemented to prevent abandonment of the active nest.

To ensure protection of nesting birds, **Special Condition 11** requires that the survey and construction period limitation measures proposed by the Applicant be implemented. The condition also clarifies that the pre-construction nesting bird surveys shall be conducted according to current CDFW protocol, and adds more specific requirements if an active nest is encountered, including a requirement for a construction-free buffer zone around the nest until after the young have fledged.

The Commission finds that the project as conditioned provides feasible mitigation measures to minimize the project's impacts on nesting birds consistent with Section 30233 of the Coastal Act.

4. Impacts to northern red-legged frogs

The northern red-legged frog (*Rana aurora*), a state-listed species of special concern, has been observed within the project area within the vicinity of the slough remnant wetland between manholes eight and ten (See Exhibit 4, page 4). Suitable habitat for the species occurs within the slough remnant and approximately fifty feet surrounding the slough remnant. No work is proposed within the slough remnant as the discharge pipeline in this location will be repaired using fold-and-form trenchless repair methods involving insertion of a sleeve within the existing pipe to avoid wetland disturbance. In addition, none of the associated forested riparian habitat is proposed to be cut or removed. However, surface construction is proposed along the discharge pipeline near the edge of the riparian canopy of the slough remnant that could crush or disturb northern red-legged frogs. Northern red-legged frogs have been observed within this area, and they are likely to forage within dense tall grass.

The Applicant proposes to avoid potential impacts to the species by having a qualified biologist conduct relocation surveys in consultation with CDFW immediately prior to any disturbance in areas of thick vegetation adjacent to wetlands. Following the relocation survey, any tall grass that has not been grazed will be mowed within the vicinity of the construction work or an exclusion fence will be placed around the construction area to reduce the likelihood that northern red-legged frogs will enter the area after construction commences.

To ensure protection of this special status species, **Special Condition 12** requires that the relocation survey measures proposed by the Applicant be implemented, but that the measures be modified to require: (1) expansion of the survey area to include all construction areas within 50 feet of all suitable northern red-legged frog habitat; and (2) relocation of any frog encountered to nearby suitable habitat. Special Condition 12 also requires that in the event that a northern-red legged frog is observed in an active construction zone, the contractor shall immediately halt construction activities until a biologist, in consultation with CDFW, has moved the frog to a safe location in similar habitat outside of the construction zone.

With the addition of Special Condition 12, the Commission finds that the project as conditioned provides feasible mitigation measures to minimize the project's impacts on northern red-legged frogs consistent with Section 30233 of the Coastal Act.

5. Impacts on water quality from post-construction stormwater runoff

The proposed project includes upgrades to the WWTF which is located in close proximity to extensive wetlands. The upgraded facility will have a slightly larger footprint than the existing facility (2,205 addition square feet), resulting in additional impervious surface. Currently the WWTF has no designed stormwater management features, and stormwater that lands on impervious surfaces at the facility runs off the site into the adjacent ditch along the facility's southern boundary or into the adjacent agricultural fields. To minimize stormwater pollution and changes in runoff flows from the site after development is completed, the Applicant proposes to design the WWTF improvements in accordance with Humboldt County development standards, which include detaining and infiltrating all stormwater on site such that post-project stormwater runoff does not exceed pre-project runoff.

The Commission attaches **Special Condition 13** requiring the Applicant to submit a post-development stormwater management plan for the wastewater treatment facility. Pursuant to Special Condition 13, the plan must be prepared by a qualified California-licensed professional, and must address runoff from all new and/or replaced impervious and semi-pervious surfaces. The plan must include a description of the post-construction stormwater BMPs that will be implemented including a schedule for installation or implementation of all BMPs, and a description and schedule for the ongoing management of all post-development BMPs that will be performed for the life of the development, if required for the BMPs to function properly. The plan must also include a description and calculations demonstrating that the 85th percentile design storm runoff volume will be retained on-site, giving precedence to an LID approach; or if the 85th percentile runoff volume cannot be retained on site using an LID approach, the plan must include an alternatives analysis demonstrating that no feasible alternative project design will substantially improve runoff retention. Regardless of how stormwater is managed, the plan must include supporting calculations demonstrating that required BMPs have been sized and designed to infiltrate, retain, or treat, at a minimum, the runoff produced by the 85th percentile 24-hour storm event for volume-based BMPs, or two times the 85th percentile 1-hour storm event for flow-based BMPs.

The Commission finds that as proposed and conditioned, the development will improve stormwater detention and infiltration on the project site, and reduce stormwater runoff volume, flow rate, and pollutants, and thus protect the biological productivity and quality of nearby wetlands and coastal waters. The Commission finds that the proposed development, as conditioned, maintains the biological productivity and quality of coastal waters consistent with the requirements of Coastal Act section 30231.

Maintenance and Enhancement of Biological Productivity and Functional Capacity

The fourth general limitation set by Section 30233 of the Coastal Act is that any proposed dredging or filling in coastal wetlands or estuaries must maintain or enhance the functional capacity of the wetland or estuary. In addition, proposed development must maintain, enhance,

and where feasible restore, the biological productivity and the quality of wetlands and waters consistent with the requirements of Sections 30230 and 30231.

The mitigation measures incorporated into the project and required by the special conditions discussed above will ensure that the project will not have significant adverse impacts on coastal waters or wetlands in and around the project vicinity. Furthermore, the primary purpose of the project is to improve the treatment capabilities and discharge regime of Loleta's wastewater treatment system in order to improve the biological productivity and quality of the Eel River and its tributaries.

Therefore, the Commission finds that the project, as conditioned, will maintain and enhance the biological productivity, quality, and functional capacity of coastal waters and wetlands consistent with the requirements of Sections 30230, 30231, and 30233 of the Coastal Act.

I. PROTECTION OF AGRICULTURAL LANDS

Coastal Act Sections 30241 and 30242 require the protection of agricultural lands and set limits on the conversion of agricultural lands to non-agricultural uses. Coastal Act Section 30241 states:

> *The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas agricultural economy, and conflicts shall be minimized between agricultural and urban land uses through all of the following:*
>
> *(a) By establishing stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses.*
>
> *(b) By limiting conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses or where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development.*
>
> *(c) By permitting the conversion of agricultural land surrounded by urban uses where the conversion of the land would be consistent with Section 30250.*[9]
>
> *(d) By developing available lands not suited for agriculture prior to the conversion of agricultural lands.*
>
> *(e) By assuring that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.*

[9] The portion of referenced section 30250 applicable to this project type and location [sub-section (a)] requires that, "*New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.*"

> *(f) By assuring that all divisions of prime agricultural lands, except those conversions approved pursuant to subdivision (b), and all development adjacent to prime agricultural lands shall not diminish the productivity of such prime agricultural lands.*

Coastal Act Section 30242 states:

> *All other lands suitable for agricultural use shall not be converted to nonagricultural uses unless (l) continued or renewed agricultural use is not feasible, or (2) such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250. Any such permitted conversion shall be compatible with continued agricultural use on surrounding lands.*

Coastal Act Section 30243 states in applicable part:

> *The long-term productivity of soils and timberlands shall be protected…*

The proposed project is located in the Eel River Delta which accounts for more than half of the cultivated agricultural lands in Humboldt County's coastal zone and is the heart of the County's dairy industry. The soils of the Eel River Delta are a significant coastal resource enhanced by the deposits left by major and minor flooding.[10]

The project will not convert any farmland to nonagricultural use, or conflict with existing agricultural zoning or use. First, the wastewater treatment facility (WWTF), originally constructed in 1956, is located on a parcel owned by the Loleta CSD that has a land use designation of Public Facilities (APN 309-211-006). The parcel is not used for grazing and is largely covered by a layer of gravel fill. The improvements to the WWTF and the new pump for land application of treated wastewater will be located entirely within the WWTF parcel, and therefore will not impact agricultural lands.

Second, the remainder of the project (the repairs to the existing discharge pipeline, installation of the irrigation force main, and land application of treated wastewater) is located on prime agricultural lands designated as Agriculture Exclusive that are actively used for cattle grazing, including one parcel enrolled in a Williamson Act contract (APN 309-251-002; the parcel where the discharge pipeline outfalls to a wetland). Because the existing pipeline to be repaired and the new pipeline to be installed are located underground and do not interfere with grazing activities above ground, these pipelines will not result in a conversion of agricultural lands to non-agricultural uses. In addition, the use of a retractable sprinkler system to irrigate approximately 47 acres of grazing land with treated wastewater will be supportive of continued agricultural use of the affected parcel. The lease agreement for the Loleta CSD's use of the subject property specifically provides that the Loleta CSD and the property owner will meet each year to agree on and coordinate irrigation and cattle grazing rotation schedules so that the property owner can continue to graze livestock on the parcel year round.

[10] Information in this paragraph is taken from the Eel River Area Plan, a portion of Humboldt County's certified land use plan.

Furthermore, the land application system will irrigate agricultural land during the dry season, improving the quality of the grazing area. The Loleta CSD's 2016 Wastewater Facilities Plan included water balance calculations to determine the area required for irrigation of crop cover at agronomic rates that do not exceed the hydraulic and nutrient agronomic needs of the vegetation being irrigated.[11] The facility has a design and permitted average dry weather flow (ADFW) of 0.081 million gallons per day (MGD), while current actual ADFW is approximately 0.05 MGD and projected ADFW for year 2040 is 0.062 MGD. According to the water balance calculations, for the projected ADWF of 0.062 MGD, approximately 34 acres of land is needed for treated wastewater application at agronomic rates. The proposed land application system will irrigate 47 acres during the dry season, well within the agronomic threshold for current and projected ADFW.

Although the proposed project will not result in a conversion of agricultural land to a nonagricultural use, the proposed repair and installation of buried pipeline will involve temporary construction impacts to agricultural lands. The Loleta CSD proposes a number of mitigation measures to minimize these impacts. Construction work, including access and staging, will be limited to only a small portion of the agricultural parcels within the vehicle access routes and pipeline corridors shown in Exhibit 4, page 2, and construction will affect only a portion of the work area at a given time as the pipe sections are worked on sequentially. Existing fences and gates will remain functional and grazing activities will be ongoing during repairs of the existing pipeline and construction of the land application system. Temporary fencing around construction activities will be installed if needed to prevent conflicts with livestock. The above-mentioned limitations on the work area have been included under **Special Condition 7**.

To ensure the continued productivity of prime agricultural lands and protect the long-term productivity of soils, the Applicant has proposed to separately stockpile the top six inches of excavated material during trenching in agricultural areas, keep the material moist, and return the material to the construction trench as soon as feasible after repairs or replacement of pipeline segments are completed. According to the Applicant's proposal, the topsoil material will be reintroduced as the top fill material in the restored trench section. The Applicant also proposes to decompact, recontour, and reseed construction areas as need to restore pre-project conditions in the agricultural fields. **Special Condition 7** requires that these mitigation measures are implemented. The special condition also requires that a qualified engineer be on site during final grading and recontouring activities to ensure that the construction corridors are graded and recontoured consistent with the elevation of the adjacent grazed seasonal wetlands and no depressions, ridges, or mounds result.

In addition, the Commission attaches **Special Condition 10** requiring a qualified biologist or botanist to prepare a vegetation monitoring report for the review and written approval of the Executive Director within 18 months of completion of repairs to the existing discharge pipeline and installation of the new irrigation force main to evaluate whether vegetation in any of the grazed seasonal wetland areas impacted by project construction has reestablished to a level of

[11] Use of treated effluent for irrigation of crop cover at agronomic rates is known as reclamation. In contrast, land application of treated effluent in excess of agronomic rates resulting in direct discharge to soil and groundwater is known as land disposal.

coverage and density equivalent to vegetation coverage and density of the surrounding undisturbed areas. If the report indicates that the revegetation of any of the areas disturbed by construction has not been successful, in part, or in whole, Special Condition 10 requires a revised revegetation program to be submitted to achieve the objective.

Therefore, the Commission finds that the proposed project is consistent with Sections 30241 and 30242 of the Coastal Act.

J. ARCHAEOLOGICAL RESOURCES

Section 30244 of the Coastal Act states:

> *Where development would adversely impact archeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

The project area lies within the traditional territory of the Wiyot tribe. At the time that Euro-Americans first made contact in this region, the Wiyot lived almost exclusively in villages along the protected shores of Humboldt Bay and near the mouths of the Eel and Mad Rivers. Today, representatives of the Wiyot Tribe are the Table Bluff Reservation Wiyot Tribe, the Blue Lake Rancheria, and the Bear River Band of the Rohnerville Rancheria.

William Rich and Associates conducted a cultural resource investigation and prepared a report for the subject project in 2017, and an updated investigation and report in 2018 (the update was due to project changes). The investigation included a review of the files at the Northwest Information Center (NWIC); a review of archaeological and historical literature pertinent to the project area and general region; correspondence with Native Americans and other knowledgeable individuals regarding the history of the area; and an intensive field survey. According to the NWIC files, the project area has not been included in previous cultural resources surveys. No specific villages or other named areas are documented in the ethnographic literature for the town site of Loleta.

Cultural resources field surveys of the project area were completed on November 30, 2016, January 23, 2017, May 16, 2017 and May 18, 2018. Survey methods included an intensive pedestrian surface inspection over all portions of the project area. This included a survey of the WWTF and walking the existing route of the discharge pipeline and the proposed route of the irrigation force main. No artifacts, features, sites, historic buildings, or other cultural resources were identified within the project area during this investigation.

The Native American Heritage Commission (NAHC) was asked to search their sacred lands database for the project area. Those groups and individuals indicated by the NAHC were consulted by writing on November 22, 2016 and again on May 18, 2018, and included Tribal Historic Preservation Officers (THPO) for the Bear River Band of the Rohnerville Rancheria, the Wiyot Tribe and the Blue Lake Rancheria. All three THPOs responded indicating that the project is not located in a known archaeologically sensitive area, and recommending that protocols for the evaluation and protection of archaeological resources discovered during construction be

made a condition of project approval. Commission staff also referred the application to the three THPOs on February 27, 2017 and again on January 17, 2019 and the three THPOs responded with no additional concerns.

In response to the request of the THPOs, to ensure protection of any cultural resources that may be discovered at the site during project construction, the Commission attaches **Special Condition 14**. This condition requires that if an area of cultural deposits or human remains is discovered during the course of the project, all construction must cease and a qualified cultural resource specialist, in consultation with the THPOs of the Wiyot Tribe, the Bear River Band of Rohnerville Rancheria, and the Blue Lake Rancheria, must analyze the significance of the find. To recommence construction following discovery of cultural deposits or human remains, the Permittee is required to submit a supplementary archaeological plan for the review and approval of the Executive Director and obtain a permit amendment for changes the Executive Director determines are not *de minimis* in nature and scope.

Therefore, the Commission finds that the development, as conditioned, is consistent with Coastal Act section 30244.

K. VISUAL RESOURCES

Section 30251 of the Coastal Act states, in applicable part, as follows:

> *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas…*

Although the project area is not located in a designated Coastal Scenic or Coastal View area identified in the certified Humboldt County Local Coastal Program, the area is comprised of scenic open agricultural lands with seasonal wetlands, sloughs, and riparian forest. The proposed project as designed and sited will not obstruct views to or along the ocean or scenic coastal areas, alter natural landforms, or be visually incompatible with the character of surrounding area.

The proposed repairs to the existing subsurface wastewater discharge pipeline and the proposed installation of a new irrigation force main will not result in a permanent visual change to the project area. Although work on these pipelines involves trenching, as proposed and conditioned by **Special Condition 7**, the Applicant will restore all trenched areas and surrounding areas of disturbance to pre-project conditions following construction so that the shape and form of the landscape will not be significantly altered.

As for the WWTF improvements, the Applicant has submitted visual simulations showing the height and bulk of the proposed wastewater treatment facility extension as seen from the adjacent public road (Eel River Road), from directly north and south of the facility (Exhibit 8). These visual simulations indicate that the proposed improvements at the WWTF will not block views of

agricultural fields, riparian habitat, and forested hillsides from the public right-of-way. The WWTF will continue to be condensed on a relatively small 0.54-acre parcel set against a backdrop of large expanses of open agricultural land. In addition, the footprint of the WWTF is located below the adjacent roadway, with approximately fourteen feet of elevation loss between the top and bottom of the facility's driveway. As a result, existing views from the road are primarily over the top of the facility.

The existing WWTF has exterior lighting and additional lighting may be added to the upgraded WWTF. The Applicant proposes to shield any new lights to direct the light downward and to design and install any new lighting so as not to create a new source of substantial light or glare that could adversely affect day or nighttime views. To ensure exterior lighting is installed as proposed, **Special Condition 15** requires a final lighting plan for the approved development be submitted for the review and approval of the Executive Director. Special Condition 15 requires that all new outdoor night lighting shall be minimized, directed downward, and shielded using the best available dark skies technology and pole height and design that minimizes light spill, sky glow, and glare impacts. The condition also requires that any security lighting attached to structure use a control device or automatic switch system or equivalent functions to minimize lighting.

The Commission notes, however, that future alterations to the treatment facility's structural size, bulk, or height, or the installation of other fixtures or landscaping that change the exterior appearance of the facility could compromise the visual appearance of the WWTF and result in significant adverse visual impacts to the site and surrounding area. The Commission notes that the development entails a "*public works facility*" as defined by Section 30114 of the Coastal Act. Although some types of alterations and improvements to existing structures are exempt from the need to obtain a coastal development permit under Coastal Act Section 30610(b), improvements to public works facilities are not so excluded from the Act's permitting requirements. Accordingly, the Commission will be able to review permit amendments for such future additions or improvements to the WWTF to ensure that visual impacts are minimized or avoided. **Special Condition 5** provides notice to the Permittee of these existing requirements of the Coastal Act by stating that any future improvements or modifications to the WWTF or other approved development will require a permit amendment to Coastal Development Permit 1-17-0200 from the Commission.

Therefore, the Commission finds that the project as conditioned is consistent with Section 30251 of the Coastal Act.

L. PUBLIC ACCESS

Section 30210 of the Coastal Act requires that maximum public access shall be provided consistent with public safety needs and the need to protect natural resource areas from overuse. Section 30212 of the Coastal Act requires that access from the nearest public roadway to the shoreline be provided in new development projects, except where it is inconsistent with public safety, military security, or protection of fragile coastal resources, or where adequate access exists nearby. Section 30211 of the Coastal Act requires that development not interfere with the public's right to access gained by use or legislative authorization. Section 30214 of the Coastal Act provides that the public access policies of the Coastal Act shall be implemented in a manner

that takes into account the capacity of the site and the fragility of natural resources in the area. In applying Sections 30210, 30211, 30212, and 30214, the Commission is also limited by the need to show that any denial of a permit application based on these sections or any decision to grant a permit subject to special conditions requiring public access is necessary to avoid or offset a project's adverse impact on existing or potential access.

The proposed project is located between the first public road (Eel River Drive) and the sea. The project area includes privately owned agricultural fields and the Loleta CSD's WWTF parcel. The proposed project does not involve any changes or additional restrictions to existing public access that would interfere with or reduce public access or recreational opportunities. Project construction does not require any public road closures or any other interference with public right-of-ways. Furthermore, the proposed project would not create any new demand for public access or otherwise create any additional burdens on public access.

Therefore, the project will have no significant adverse effect on public access, and the Commission finds that the project, as proposed without new public access, is consistent with the public access policies of the Coastal Act.

M. APPLICANT'S LEGAL INTEREST IN THE PROPERTIES

Under Section 30601.5 of the Coastal Act, an applicant for a coastal development permit (CDP) does not need to be the owner of a fee interest in the property on which the proposed development is located as long as the applicant can demonstrate a legal right, interest, or other entitlement to use the property for the proposed development, and as long as all holders or owners of any other interests of record in the affected property are notified in writing of the permit application and invited to join as coapplicants. In addition, Section 30601.5 of the Coastal Act requires that the applicant demonstrate authority to comply with all conditions of approval prior to issuance of a CDP.

The existing wastewater discharge pipeline proposed to be repaired crosses three parcels: APNs 309-211-007 and 309-211-002 owned by Mr. Genzoli and Ms. Porter; and APN 309-251-002 owned by Mr. and Ms. Rice. Current title reports for the aforementioned properties indicate easements for the sewer pipeline, recorded in Book 225 of Deeds, Pages 64-67, Humboldt County Records. These recorded easements provide the rights to maintain, inspect, and repair the discharge pipeline. The recorded easements do not limit the scope of work to be completed on each parcel, with the exception that the pipeline be maintained in its current location, that the diameter of the pipe not be increased, and that the condition of the land be returned to its original state following maintenance and repair activities.

The proposed new irrigation force main pipeline will be located on APN 309-191-012, owned by R4 Ranches. A pasture use lease agreement was executed in March 2018 to allow the Loleta CSD use and access to the approximately 55.5-acre parcel to be used for construction and operation of an irrigation system for land application of treated wastewater. The term of the aforementioned lease agreement is ten years, with automatic renewal of extension terms of five years each. To address the temporary nature of the lease agreement, the Commission attaches **Special Condition 3** which specifies that CDP 1-17-0200 authorizes the new pipeline for the land application of treated effluent only so long as the Permittee is legally authorized by the

property owner to use the site, but in no event more than twenty years from the date of Commission approval of the CDP (i.e. until April 10, 2039).

As required by Section 30601.5 of the Coastal Act, the Applicant has submitted evidence that (a) each property owner has been notified of the project as proposed in the CDP application, and (b) each property owner has been invited to join the CDP application as a co-applicant.[12] To ensure that the Loleta CSD has the authority to comply with all conditions of approval of CDP 1-17-0200 on properties not owned by the Applicant (APNs 309-211-007, 309-211-002, 309-251-002, and 309-191-012) consistent with Section 30601.5 of the Coastal Act, the Commission attaches **Special Condition 16**, requiring that Applicant, prior to permit issuance, show evidence that all affected property owners have agreed in writing that the Applicant may undertake development on their properties pursuant to CDP 1-17-0200 as conditioned by the Commission.

Finally, **Special Condition 5** acknowledges that no changes to the approved development may be incorporated into the project until the Applicant/Permittee obtains a Commission amendment to this CDP, unless the Executive Director determines that no amendment is legally required.

The Commission finds that as conditioned, the development is consistent with the requirements of Section 30601.5 of the Coastal Act.

N. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The Loleta CSD served as the lead agency for the project for CEQA purposes. The Loleta CSD prepared a Mitigated Negative Declaration (MND) for the project that was adopted on October 27, 2017 (SCH #2017082013). The Loleta CSD also adopted an Addendum to the MND on August 16, 2018 to address substantial changes to the project area and scope.[13]

Section 13906 of the Commission's administrative regulation requires Coastal Commission approval of coastal development permit applications to be supported by a finding showing the application, as modified by any conditions of approval, is consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits approval of a proposed development if there are any feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect the proposed development may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. No public comments regarding potential significant adverse environmental effects of the project were received by the County as the lead agency during CEQA review of the project, nor were any public comments received by the Coastal Commission prior to preparation of the staff report. As discussed above, the proposed project has been conditioned to be consistent with the

[12] In letters dated January 3, 2019, the Applicant's consultant notified the affected property owners of the proposed project and invited the property owners to join as coapplicants.

[13] The addendum evaluated two project modifications. The first modification was a change in the proposed land application site and the second was the additional project element of rehabilitating the Loleta CSD's existing wastewater discharge pipeline. The Addendum concluded that the additional project components would result in similar effects to those previously analyzed. On the basis of the evaluation presented in the Addendum, it was determined that the proposed changes did not alter the conclusions of the previous CEQA document.

policies of the Coastal Act. As specifically discussed in these above findings, which are hereby incorporated by reference, mitigation measures that will minimize or avoid all significant adverse environmental impacts have been required. As conditioned, there are no other feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impacts which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act to conform to CEQA.

APPENDIX A
SUBSTANTIVE FILE DOCUMENTS

Application file for CDP Application No. 1-17-0200

California Coastal Commission. (2015, August 12; including October 2018 Science Update adopted November 7, 2018). California Coastal Commission sea level rise policy guidance: Interpretive guidelines for addressing sea level rise in local coastal programs and coastal development permits.

California Department of Fish and Game. (2010, July). Lower Eel River Watershed Assessment; Estuary Subbasin. Coastal Watershed Planning and Assessment Program.

County of Humboldt. (2019, February). Staff report for the Loleta Community Services District – Wastewater Treatment Facility Improvements Project (Case Number PLN-2018-15014-CUP).

County of Humboldt Local Coastal Program; Eel River Area Plan.

Griggs, G., Árvai, J., Cayan, D., DeConto, R., Fox, J., Fricker, H.A., Kopp, R.E., Tebaldi, C., Whiteman, E.A. (California Ocean Protection Council Science Advisory Team Working Group). (2017, April). Rising Seas in California: An Update on Sea Level Rise Science. California Ocean Science Trust.

Humboldt Local Agency Formation Commission. (2008, September). Loleta Community Services District Municipal Service Review.

Laird, A., & Powell, B. (2013). Humboldt Bay shoreline inventory, mapping, and sea level rise vulnerability assessment; with an addendum: Shoreline vulnerability ratings. Prepared for the State Coastal Conservancy.

North Coast Regional Water Quality Control Board. (2019, February). Water Quality Certification for the Loleta Community Services District Wastewater Treatment System and Effluent Disposal Improvement (WDID No. 1B180147WNHU, ECM PIN CW-851430).

Northern Hydrology & Engineering. (2015, April). Humboldt Bay: Sea level rise, hydrodynamic modeling, and inundation vulnerability mapping – Final report. Prepared for the State Coastal Conservancy and Coastal Ecosystems Institute of Northern California.

OPC State of California Sea-Level Rise Guidance, 2018 Update: http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf

SHN Engineers & Geologists. (2016, August). Wastewater facilities plan. Prepared for Loleta Community Services District.

SHN Engineers & Geologists. (2018, June). Natural resource assessment for the LCSD wastewater treatment facility and effluent disposal improvement project. Prepared for Loleta Community Services District.

SHN Engineers & Geologists. (2018, August). Wetland and ordinary high water mark delineation for the LCSD wastewater treatment facility and effluent disposal improvement project. Prepared for Loleta Community Services District.

State Water Resources Control Board. (2019, February). Order approving change in purpose of use and place of use in the matter of Wastewater Petition WW0102 Loleta Community Services District.

William Rich and Associates (2018, June). A cultural resources investigation of the Loleta Community Services District: upgrades to the wastewater treatment facility, discharge pipe rehabilitation and treated effluent land application area, Humboldt County. Prepared for SHN Engineers and Geologists.

APPENDIX B
Wastewater Treatment Facility Upgrades

Proposed improvements to the WWTF include a new influent pump station, primary treatment in the form of a rotary drum screen, extended aeration secondary treatment, and an ultraviolet (UV) disinfection system. The facility will continue its current practice of contracting with a third party for biosolids disposal.

Below is a detailed description of these components based on the Loleta CSD's 2016 Wastewater Facilities Plan. See Exhibit 6 for schematic diagrams of the existing and proposed treatment processes.

1) Influent pump station: The proposed new influent pump station is required to lift the wastewater from the collection system to the aboveground headworks of the treatment facility. The proposed influent pump station at the WWTF would include submersible sewage pumps with variable frequency drives placed in a wet well. The wet well would be sized to allow low nighttime flows to accumulate to a significant volume prior to pumping to the treatment facility. A 12,000-gallon overflow/equalization tank would be adjacent to the influent pump station to accommodate wastewater overflow. When the level in the pump station subsides, the wastewater diverted to the overflow tank would flow back to the wet well by gravity through a check valve.

2) Headworks/primary treatment: A rotary drum screen with a washer/compactor is proposed to screen wastewater when it enters the treatment system to remove large suspended, settleable, or floating solids that could interfere with or damage equipment later in the process. The headworks would also consist of a flow measuring device and a composite sampler in order to monitor hydraulic and organic loading at the facility. This equipment would be sheltered from the elements with a fixed roof.

3) Secondary treatment in the form of an extended aeration package plant: A concrete extended aeration package plant is proposed for secondary treatment of the wastewater. Wastewater would enter the extended aeration package plant and enter the aeration chamber, where air would be used to mix wastewater and supply oxygen to promote biological growth. The mixed liquor would then flow to a clarifier or settling chamber where most microorganisms would settle to the bottom of the clarifier and a portion would be pumped back to the incoming wastewater at the beginning of the plant. This returned material is the return activated sludge. The material that is not returned, the waste activated sludge, would be removed for treatment and disposal. The clarified wastewater would then flow over a weir and into a collection channel before being diverted to the UV disinfection system. Blowers, a generator, and a control panel containing switches, lights, and motor starters would be attached to the packaged plant or contained in a separate room.

4) UV disinfection system: The proposed UV disinfection system would include a concrete channel and in-channel UV lamps.