Samoa Peninsula Land-based Aquaculture Project

Initial Study/Mitigated Negative Declaration
April 23, 2021

Prepared for:

County of Humboldt
Humboldt County Planning Department
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Acronym List

AES	Aesthetics
AG	Agriculture and Forest Resources
AIR	Air Quality
ALUCP	Airport Land Use Compatibility Plan
AOI	Area of Interest
APE	Area of Potential Effect
APN	Assessor Parcel Numbers
As	Arsenic, dissolved
ASCE	American Society of Civil Engineers
ATCM	Air Resource Board's Air Toxic Control Measures
BIA	Biologically Important Area
BIO	Biological Resources
BLM	Bureau of Land Management
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Cal-OSHA	California Division of Occupational Safety and Health
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CESA	California Endangered Species Act
CFCPA	California Farmland Conservancy Program Act
CFGC	California Department of Fish and Game Code
CFR	Code of Federal Regulations
CGP	Construction General Permit
CGS	California Geological Survey
CHP	California Highway Patrol
CIP	Capital Improvement Plan
CIWMA	California Integrated Waste Management Act

CNDDB	California Natural Diversity Database
CNPPA	California Native Plant Protection Act
COPC	Contaminants of Potential Concern
CPUC	California Public Utilities Commission
Cr VI	Hexavalent Chromium, dissolved
CR	Cultural Resources
CRC	California Redwood Company
CUP	Central Utility Plant
CWA	Clean Water Act
DAL	Dial-A-Lift
DAR	Dial-A-Ride
dBA	Decibels
DDT	Dichlorodiphenyltrichloroethane
DOC	Department of Conservation
DOT	Department of Transportation
DPS	Distinct Population Segment
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EAP	Energy Action Plan
EEZ	U.S. Exclusive Economic Zone
EFH	Essential Fish Habitat
ENG	Energy
ENP	Eastern North Pacific
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPI	Evergreen Pulp Inc.
EQ Zapp	California Earthquake Hazard Zones
ESHA	Envionmentally Sensitive Habitat Area
ESL	Environmental Screening Level
ESU	Evolutionarily Significant Unit
FEMA	Federal Emergency Management Agency
FESA	Federal endangered Species Act
FGC	California Fish and Game Code
FMMP	Farmland Mapping and Monitoring Program
FR	Federal Register
FSC	Fore Safe Cpimco
FTC	Freshwater Tissue Company
GDRC	Green Diamond Resource Company
GEO	Geology and Soils
GHG	Greenhouse Gas Emissions
GP	Georgia Pacific LLC

GPM	Gallons per Minute
HAZ	Hazards and Hazardous Materials
HBAP	Humboldt Bay Area Plan
HBDA	Humboldt Bay Development Association, Inc.
HBHRCD	Humboldt Bay Harbor, Recreation, and Conservation District
HBMWD	Humboldt Bay Municipal Water District
HFC	Hydrofluorocarbon
HSC	Health and Safety Code
HWMA	Humboldt Waste Management Authority
HWQ	Hydrology and Water Quality
IEPR	Integrated Energy Policy Report
IGP	Industrial General Permit
IS/MND	Initial Study/Mitigated Negative Declaration
ITE	Institute of Transportation Engineers
KGD	Unknown
kV	Kilovolt
LCFS	Low Carbon Fuel Standard
LCP	Local Coastal Program/Plan
Leq	Equivalent Continuous Sound Level
LID	Low Impact Development
LOS	Level of Service
LP	Louisiana-Pacific Corporation
LU	Land Use and Planning
MBTA	Migratory Bird Treaty Act
MC	Coastal Dependent Industrial
MC/A	Coastal Dependent Industrial with Archaeological Overlay Zoning Destination
MCT	Maximum Considered Tsunami
MG	General Industrial
MG	Million-Gallon
MGD	Million Gallons per Day
MMRP	Mitigation Monitoring and Reporting Program
Mn	Manganese, dissolved
MOE	Measures of Effectiveness
MR	Mineral Resources
MRR	Mandatory Reporting Regulation
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSL	Mean Sea Level
$MTCO_2e$	Metric Tons of Carbon Dioxide Equivalent
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NAFC	Nordic Aquafarms California, LLC.
NAHC	Native American Heritage Commission

NCRWQCB	North Coast Regional Water Quality Control Board
NCUAQMD	North Coast Unified Air Quality Management District
ND	non-detect
NESHAP	National Emissions Standard for Hazardous Air Pollutants
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Agency
NH4	Ammonium Nitrogen
NHPA	National Historic Preservation Act
Ni	Nickel, dissolved
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmostpheric Administration
NOI	Noise
NOX	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSR	New Source Review
OCP	Organochlorine Pesticide
OES	Office of Emergency Services
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Act
P	Phosphorus
PCB	Polychlorinated Biphenyl
PCFG	Pacific Coast Feeding Group
PCSD	Peninsula Community Services District
PFC	Perfluorocarbon
PFMC	Pacific Fishery Management Council
PG&E	Pacific Gas and Electric Company
PM	Particulate Matter
POP	Population and Housing
PPV	Peak Particle Velocity
PRC	Public Resources Code
PS	Public Services
PSB	Project Study Boundary
PSD	Prevention of Signification Deterioration
psu	Practical Salinity Units
PTHA	Probabilistic Site-Specific Tsunami Hazard Analysis
RAS	Recirculating Aquaculture System
REC	Recreation
RMP	Restoration and Monitoring Plan
RMT II	Redwood Maine Terminal II
ROG	Reactive Organic Gases
RV	Recreational Vehicle

RWQCB	Regional Water Quality Control Boards
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SF6	Sulfur Hexafluoride
SOP	Standard Operating Procedure
SPCC	Spill, Prevention, Control and Countermeasure
SPG	Samoa Pacific Group
SSC	Species of Special Concern
SWDS	Solid Waste Disposal Site
SWPPP	Stormwater Pollution Prevention Program
SWRCB	California State Water Resources Control Board
TAC	Toxic Air Contaminant
TCR	Tribal Cultural Resources
TDS	Total dissolved Solids
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TR	Transportation
TSS	Total Suspended Solids
TVERS	Tsunami Vertical Evacuation Refuge Structure
US	United States
USACE	United States Army Corp of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
USS	Utilities and Service Systems
UST	Underground Storage Tanks
UV-C	Ultraviolet
Uw	Universal Waste
VHFHSZ	Very High Fire Hazard Severity Zones
VMT	Vehicle Miles Traveled
WDF	Wildfire
WMU	Waste Management Unit
WNP	Western North Pacific
WQO	Water Quality Objective
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

1. Project Information

Project Title	Samoa Peninsula Land-based Aquaculture Project
Lead Agency Name & Address	Humboldt County Planning Department 3015 H Street, Eureka, CA 95501
Contact Person & Phone Number	Alyssa Suarez, Planner 1 707-445-7541
Project Location	364 Vance Ave, Samoa, CA
Project Sponsor's Name & Address	Humboldt County Planning Department 3015 H Street, Eureka, CA 95501
Local Coastal Program Land Use Designation	Industrial, Coastal Dependent (MC)
Zoning	Industrial/Coastal Dependent with Archaeological Overlay (MC/A)

1.1 CEQA Requirements

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

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

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

2. Project Description

Please note: a complete applicant-provided project description is attached and labeled Appendix M. This project description is intended to provide a brief overview of the Project pursuant to CEQA requirements.

This project description provides information and supporting figures for the Samoa Peninsula Land-based Aquaculture Project, hereafter referred to as the Project, proposed by Nordic Aquafarms California, LLC. (NAFC). The Project is proposed to be located on the Samoa Peninsula in the unincorporated community of Samoa in Humboldt County, California (Figure 1), herein referred to as the Project Site. The Project proposes to redevelop the site of the decommissioned Freshwater Tissue Samoa Pulp Mill facility (pulp mill) in order to construct a land-based finfish recirculating aquaculture system (RAS) facility (aquaculture facility) and install a three to five-megawatt (3-5 Megawatt (MW)) photovoltaic solar panel array covering approximately 690,000 square feet of the facility roofs. The Project is to be undertaken by NAFC. The applicant is proposing to raise Atlantic Salmon, subject to California Department of Fish and Wildlife (CDFW) approval.

2.1 Aquaculture Facility Description

The proposed development will be based on a RAS modular production design, with local civil and infrastructure adaption. The facility design will be based on the engineering already performed for Nordic Aquafarms' proposed Project to be constructed in Belfast, Maine and adapted to site-specific conditions at the Samoa Peninsula Project. A potential aquaculture facility layout is shown in Figure 2. The final layout may differ slightly as environmental studies and civil design moves forward.

The largest buildings at the proposed aquaculture facility contain the grow-out modules, described below. Maximum building height within the facility is expected to be approximately 60 feet. The footprint of the Phase 1 production modules is about 265,028 square feet, and the Phase 2 production module footprint is about 286,888 square feet. Construction of the grow-out modules will occur over two construction phases. Egg raising in the hatchery will begin as early as feasible during Phase 1, followed thereafter by the completion of remaining Phase 1 construction. The hatchery facility, located in the center of the Project Site, will raise the fish from egg to juvenile stage, after which they will be transported via underground pipes to the grow-out modules where they will be raised to market size. The water treatment plants will subject all inlet and wastewater to a stringent treatment process, including fine filtration, biological treatment, and ultraviolet (UV) sterilization. The remaining buildings house the administrative functions, power generation, and utility infrastructure needed to support operation, and are detailed later in the document.

The aquaculture facility is planned to be developed in two phases and would have an annual production capacity of approximately 25,000-27,000 metric tons of whole fish once complete. The aquaculture facility would produce fresh head on gutted fish and fillets for delivery to regional markets. The species to be produced at the facility is intended to be Atlantic Salmon, although the applicant has not yet received approval from CDFW for the particular species.

The proposed aquaculture facility will include a complete process, from egg to harvestable fish, contained indoors in separate buildings connected by swim pipes for fish transfer. The facility would include the following design elements:

1. A hatchery operation where eggs are hatched, and fish fry grow to juvenile size
2. A grow-out operation with large tanks where fish are grown to market size
3. A fish processing facility from which fish is processed and fresh product is shipped out 5 days a week, coproducts are chilled and stored for sale
4. Backup systems that will enable critical functions to operate for many days in the event of a power outage
5. Oxygen generation plant and liquid oxygen storage
6. Water intake treatment that ensures consistently clean water for the fish
7. An advanced wastewater treatment plant to treat the discharge water, including a Moving Bed Biofilm Reactor, a membrane bioreactor, and Ultraviolet (UV-C) dosing
8. Administrative building and associated operations/maintenance facilities

The Project includes key components described individually in the following subsections. The principal Project components are summarized in Table 2-1 Project Components.

Table 2-1 Project Components

Key Project Component	Description	Location
Pulp Mill Remediation	Building demolition and contamination remediation	APN 401-112-021 (excluding RMT II)
Ground Densification	Ground improvement for seismic, liquefaction, and tsunami risk mitigation.	APN 401-112-021 (excluding RMT II)
Aquaculture Facility Construction	Building construction and site improvements	APN 401-112-021 (excluding RMT II)

2.2 Aquaculture Facility Operation

As shown in Figure 2 (Section 2.13), the proposed facility will be comprised of multiple buildings to house and support aquaculture operations. The following sections provide a description of each building and the associated facility functionality. The layout is subject to minor modifications as final engineering designs are completed.

2.2.1 Buildings 1 & 2: Phase 1 and Phase 2 Grow-out Modules

The Phase 1 production modules are proposed to be located along the northern edge of the aquaculture facility within Building 1, which will contain the initial grow-out modules. The westerly portion of Building 2, located along the southern portion of the facility, will contain the intake water treatment facility and will also be constructed in Phase 1. The central utility

plant (CUP) houses the heating and cooling equipment needed to maintain proper water temperature during operation.

The facility is designed to capture the heat generated by the fish, and therefore a network of heat exchangers and heat pumps will be installed and connected to the production modules with subgrade heating/cooling water lines. It should be noted that upon completion of Phase 1 the facility will be commissioned and begin operation, which will continue through the ensuing construction phases. The production module buildings will be the largest structures on-site. The buildings will contain a series of tanks that will house the fish as they grow from juvenile to market size. Each tank system will feature an independent RAS system that will continuously recirculate, filter, and treat the tank volume twice per hour; with one percent of water to be removed and piped to the wastewater treatment facility (Building 5) for additional filtration and treatment prior to being discharged into the existing outfall pipe, which extends 1.55 miles (8,200 feet) offshore into the Pacific Ocean before discharging the treated water into the ocean. The utility density for these buildings will be high, and include electrical, process water, heating/cooling water, and fish transport piping.

Building 3: Hatchery

Located in the eastern side central corridor of the Project Site is the Hatchery building (Building 3), which houses the hatchery and rearing tanks needed to grow the fish from eggs to juvenile stages. The tanks within this facility will operate similarly to those within the grow-out modules; each tank cluster will be tied to a particular stage of growth and feature its own RAS system. Also like Buildings 1 and 2, the utility density in this facility will be very high, necessitating careful foundation design to accommodate the many tie-in points for process and utility lines. Fish are transported from the Hatchery building to the grow-out buildings through swim-pipes under the ground designed for seismic resiliency.

Building 4: Fish Processing and Administration

Building 4 contains the final stage of the process; fish are transported via underground piping from the grow-out modules to Building 4 for the purge process and final processing. Packaging and shipping will also occur within this building, and therefore it is important that it be centrally located on the Project Site. On the upper floor of the processing facility will be administrative offices that will contain staff that oversee every aspect of the facility operation and management.

Building 5: Wastewater Treatment and Backup Power

The wastewater treatment plant (Building 5) will house both the saltwater and freshwater discharge waste streams from the grow-out modules, hatchery, and fish processing facilities. The discharge solids will be removed through filtration and the solid sludge will be stored in air-tight containers located either below or above grade. The filtered wastewater will then undergo multiple treatment processes, included biological treatment, and UV disinfection prior to discharge through the outfall pipe into the Pacific Ocean. Building 5 will house the emergency backup generators and switch gear above the modeled tsunami inundation level on the second floor.

Oxygen Generation

The central area of the facility will house the oxygen generation system and store liquid oxygen as emergency oxygen for all systems. The facility is not located in an enclosed building. The oxygen generation system is installed on an impervious slab (Image 2-2).

Facility Operation

The facility is estimated to employ around 90-100 employees for Phase 1, and up to 150 for full Phase 2 buildout. The facility will operate 24/7, with regular operation occurring Monday-Saturday. The employees will work in two shifts, one early morning and one late afternoon. It is estimated that the morning shift will consist of about 60 employees in Phase 1, increasing to approximately 90 in Phase 2, and the evening shift will have about 30 employees in Phase 1, increasing to approximately 60 in Phase 2. Aside from shift arrival and departure, on-site traffic will be mainly limited to personnel movement, deliveries, and outgoing shipments of products and coproducts. Fish movement within the Project Site will be handled by subgrade piping and thus will not add to surface traffic. To reduce the number of single-occupant commute vehicles traveling to the site each day, NAFC shall prepare a Transportation Management Plan and receive approval from the Planning and Building Department as part of the Coastal Development permit. The Transportation Management Plan may utilize various mechanisms to achieve a reduction of ten percent less vehicles commuting to the site than the number of employees, including but not limited to:

1. Encourage ride-sharing and carpooling vanpooling to reduce Vehicle Miles Traveled (VMT). The operator of the facility should design and implement carpooling and ride-sharing incentive program for employees. Would establish a rideshare coordinator to facilitate ridesharing or van pooling of employees.
2. Encourage employees to remain on-site during meal breaks by providing a break room with kitchen, catering options, or cafeteria.
3. Work with the local transit authority to extend bus service to the site. The current bus transit stop is approximately 2-miles away.
4. Install shower facilities and places for employees to dress for those who commute via bicycle.

Installation of a transit stop in proximity to the project can be used to satisfy this requirement. An annual report detailing the measures implemented as part of the Transportation Management Plan shall be submitted to the Planning and Building Department by January 1 of each year.

Facility Parking

Parking at the facility will be located throughout the central campus corridor between Building 1 and Building 2, providing access to all facility buildings. The facility will include a three-truck loading dock, seven-truck unloading/loading areas, 115 standard light vehicle parking spots, and six Americans with Disabilities Act (ADA) accessible light vehicle parking spots. At full production there would be a maximum of 100 employees at the facility at any given time. That would include approximately 20 employees in the approximately 6,400 square foot office/management area of Building 4 and approximately 80 employees spread throughout the rest of the facility. A Special Permit has been applied for concurrently with

the Coastal Development Permit (CDP) for an exception to the loading space requirements pursuant to Section 313-109.1.5.2 of the Humboldt County Code.

Facility Truck Traffic

Facility operations will include regular shipments from and deliveries to the facility. Shipments would include finished product to market and waste streams to secondary use processing sites. While the final distribution strategy for the facility is still in development, initial estimates have been made based on knowledge of existing West Coast markets in relative proximity to the Project Site. At full production, it is currently estimated that there will be 40 outgoing product delivery trucks per week with approximately 30% going to the Seattle area, approximately 30% going to the Los Angeles area, and approximately 40% going to the San Francisco Bay Area. It is expected at full production there will be 32 outgoing trucks weekly carrying waste streams to various secondary use processing sites within 150 miles of the facility. Deliveries to the facility include fish feed, shipping materials, and process chemicals. Deliveries of fish feed will consist of 20 trucks per week originating in central Oregon. The final feed vendor will be selected later. Deliveries of shipping materials and process chemicals will consist of three trucks per week likely originating in the Redding or San Francisco Bay area. As Project design progresses NAFC will refine its sourcing and distribution strategies to align with market demand and optimize logistics.

Power Backup Systems

If electrical power supply is shut down to the aquaculture facility, an on-site emergency backup power system would activate to maintain all critical functions for the fish. NAFC anticipates that several dual fuel (natural gas or diesel) generators with a combined capacity of approximately 20 MW will be needed to supply emergency power to the fully developed facility. The natural gas will be supplied by the existing 4-inch main on-site. Low Sulphur diesel fuel will be supplied by two new 25,000-gallon double walled fiberglass underground storage tanks (UST). The USTs will be located under a paved area east of Building 5 which will house the backup generators. The USTs will include associated piping that will provide primary and secondary containment and will be equipped with continuous vacuum, pressure, or hydrostatic monitoring. The design and installation of the USTs will ensure that in the event of a tsunami there will be no release of fuel from the tanks. Tsunami mitigation will include anchoring and armoring the tanks, securing all ports with watertight locking hatches, and locating vents above the modeled inundation levels. Generator testing and maintenance activities will be done using natural gas. Emergency operation of the generators will use natural gas, except in the event that the supply of natural gas is interrupted in which case the generators will run on diesel fuel. In this way, diesel provides a “backup to the backup.” The backup generation system will be designed to rapidly respond to interruptions in the power supply to the facility and maintain critical equipment and infrastructure. The backup power generation system can run as long as necessary in the event of a prolonged power outage but is anticipated to be used no more than several hundred hours in a given year. Additional on-site power will be generated by the rooftop solar installation.

Oxygen Systems

On-site oxygen generation systems will be used, with additional liquid oxygen storage tanks. There will be a curb around the oxygen storage area to contain any minor spills; however,

spills are not anticipated, and any liquid oxygen released would quickly evaporate into the atmosphere. The oxygen system will be dimensioned and planned in more detail in the permitting phase.

Central Utilities

This facility will include required heating and cooling systems, as well as the central facility switch boards. Water-based temperature systems will be used to reduce electricity use.

Storage/Workshop Area

A space will be reserved for various materials and equipment storage uses. This multifunctional space will additionally provide workshop space for use by operations and maintenance staff of the aquaculture facility.

Solar

An approximately 3-5 MW solar array would be installed on the facility roofs. Electrical power generated by the solar array would be utilized by the aquaculture facility to help support operations. There are currently no plans to utilize batteries to store solar power. Roof mounted solar panels would be provided through a third party at the final stages of the Project to protect the equipment from potential damage during construction.

The proposed solar array would consist of multiple rows of photovoltaic panels arranged to maximize solar insolation and covering approximately 690,000 square feet of the facility roofs. The photovoltaic arrays will use an appropriate racking system designed to resist gravity, wind, and seismic loads. Two mounting systems are possible: a ballasted on-roof application for fixed panel layout, or a structural post and beam system for a tracking panel layout. The ballasted system panel would be placed with its bottom approximately 9 inches above the roof surface. If a post and beam system is used, the bottom of panel will be approximately 54 inches above the roof surface.

Solar panels produce minimal amount of glare as they are designed to absorb sunlight to the greatest extent possible. NAFC has not determined the final mounting system but does anticipate selecting bifacial solar panels based on their performance in roof mounted systems.

2.3 Existing Infrastructure and Use

The following pulp mill industrial components are planned for reuse in association with the Project (general location on-site noted in parentheses):

1. 60-KV, 20 MW electrical switchyard (northwest portion of pulp mill site)
2. Ocean outfall for discharge of treated effluent (northwest portion of pulp mill site)
3. Piping and intake structure for intake of salt water (East of pulp mill site)

The following pulp mill structures are within the Project redevelopment area and are planned for demolition (general location on pulp mill site noted in parentheses):

1. Reboiler (boiler) buildings (northwest)
2. Five brick silos (north-center)

3. Concrete smokestack (northwest-center)
4. Miscellaneous concrete foundations, pedestals, and concrete structures (throughout site)
5. Leach field (south-center) to be used temporarily for Phase 1 and subsequently decommissioned for Phase 2
6. A clarifier system with two tank pools and multi-stage sand filter rack (southwest)
7. Machine building, attached warehouse, and office (northeast)
8. Elevated water tank (northeast)
9. Demolition debris piles (throughout site) to be removed by the Humboldt Bay Harbor, Recreation, and Conservation District (HBHRCD)

There are currently seven tenants leasing areas within the proposed Site under an Interim Non-Coastal Dependent Industrial lease with HBHRCD. Occupants will be relocated with the assistance of HBHRCD in compliance with the California Relocation Assistance and Real Property Acquisition Guidelines. Current tenants will be permitted to remain on the property at prior to demolition activities. Image 2-1 provides an overview of the existing site infrastructure.

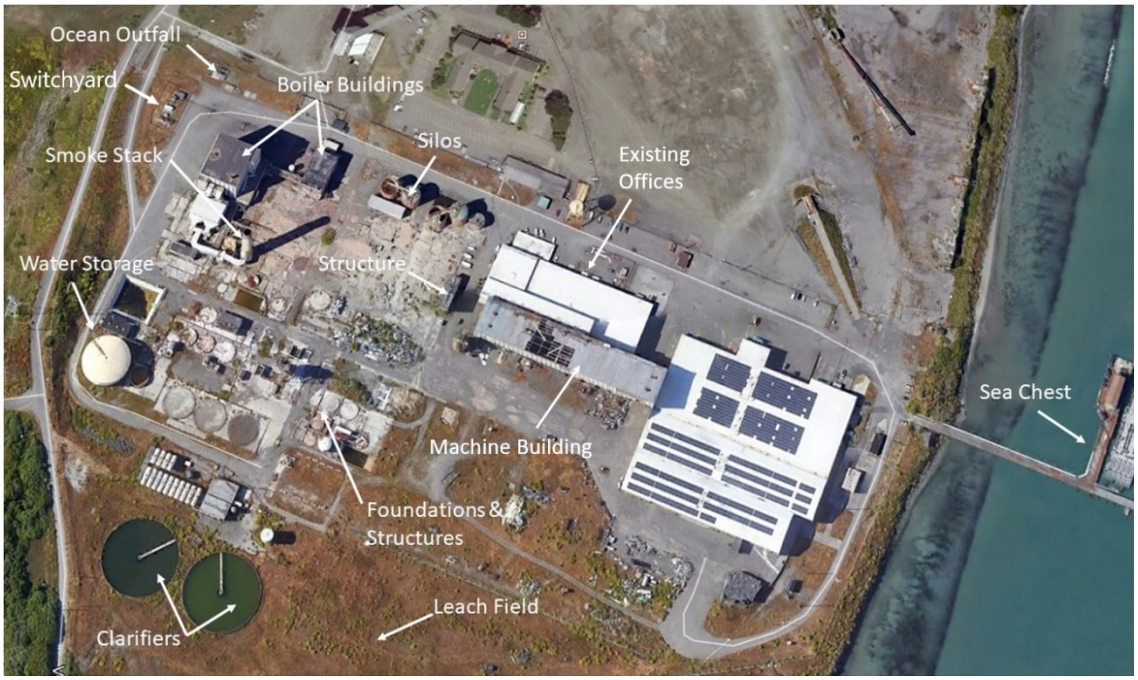


Image 2-1 Project Site Existing Conditions

2.4 Overall Project Timeline

Special studies and initial permit submission were submitted to the agencies in September and October 2020. The permitting phase is expected to generally be complete by June 2021. Project civil engineering and design are currently underway and anticipated to be completed in due course after permits are obtained. Project construction would follow once the required agency approvals and permits are secured by NAFC. It is expected that demolition and construction would commence following final permit approvals, likely between the fall of 2021 and the summer of 2022.

2.4.1 Project Phasing

The proposed Project development components summarized in Table 2-2 are generally planned to be completed during three phases (Phase 0, Phase 1, and Phase 2), with each phase containing one or more construction components (sub-phases). The general phases of construction are summarized in Table 2-2 and Image 2-2 below.

Following the necessary preparatory clearing and site work defined as Phase 0, the Phase 1 construction will begin. The construction approach will be divided into multiple phases in order to limit the amount of disturbed area at any given point, and to allow for focused soil erosion and sediment control measures to be implemented to prevent any impacts from the development process. Construction efforts will be ordered according to the facilities of most immediate need.

Construction work associated with Phase 1 is anticipated to begin in 2022 and extend through 2024. Phase 1 will include construction of the Phase 1 hatchery and production modules and the central utility structures, including connection to the necessary intake and discharge infrastructure. Following the construction of the Phase 1 production modules, construction will commence on the fish processing and administrative building.

Table 2-2 Project Phasing

Phase Number	Phase Summary	Phase Construction Components
Phase 0	Brownfield Redevelopment	1. Asbestos abatement 2. Structure demolition including the use of explosives for the smokestack and boiler building. 3. Soil remediation (including excavation, as necessary to facilitate demolition) 4. Waste stream characterization, transportation and disposal

Phase Number	Phase Summary	Phase Construction Components
Phase 1	Brownfield Redevelopment and Aquaculture Facility First Stage	1. Intake and outfall connections 2. Ground densification 3. Hatchery building 4. Construction of the following: a. Phase 1 grow-out modules b. Fish processing plant c. Central utility plant d. Intake water treatment e. Wastewater treatment building f. Backup systems plant g. Oxygen generation plant h. Other minor supporting infrastructure 5. Soil remediation (including excavation, as necessary to facilitate construction) 6. Other site civil work including stormwater management, Low Impact Development (LID) and landscaping 7. On-site and off-site agency-required biological mitigation
Phase 2	Aquaculture Facility Second Stage	1. Additional ground densification 2. Phase 2 grow out module 3. Soil remediation (including excavation, as necessary) 4. Expansion of utilities

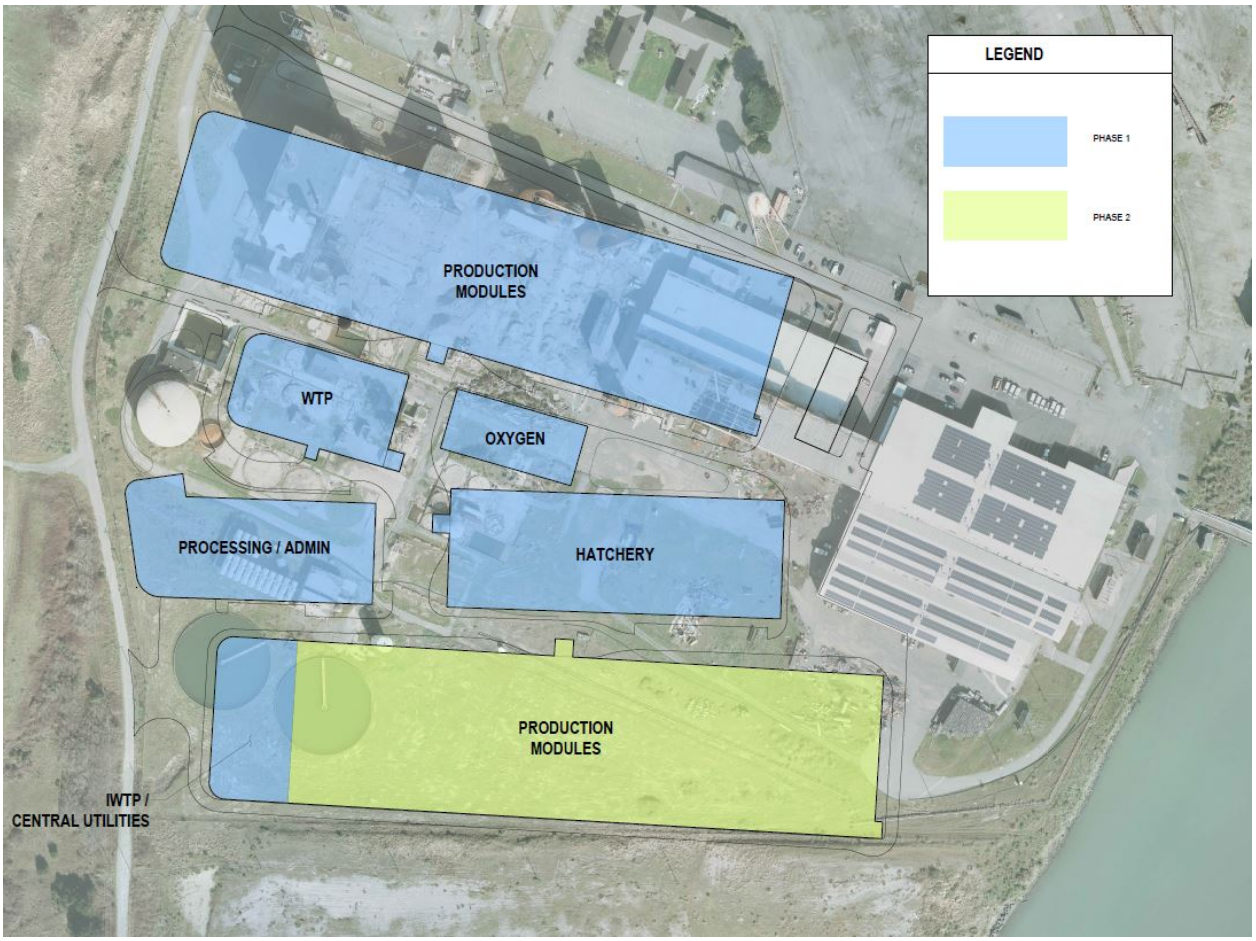


Image 2-2 Building Project Phasing

Once Phase 1 construction and equipment installation is complete, commissioning and startup of the facility will begin. As the commissioning process is underway, the aquaculture facility site will undergo permanent stabilization measures including seeding/planting of disturbed areas and slopes, establishment of the permanent stormwater system, and native landscaping. Only once the Phase 1 region is fully stabilized and the facility is independently operating, will Phase 2 construction commence.

Construction work associated with Phase 2 is expected to begin one year after Phase 1 is started. Prior to the beginning of Phase 2 construction, additional clearing and demolition of infrastructure within the proposed footprint will occur. An overall construction perimeter will be established to prevent impacts from development on the surrounding areas, and localized erosion and sediment control measures will be implemented as construction proceeds across the Project Site. The Phase 2 grow-out building footprint will be prepared for foundation and envelope construction. Access roads and supporting infrastructure will be expanded to facilitate the construction effort. The stormwater system developed for the Phase 1 facility will also be extended to encompass the Phase 2 area, with proper sediment collection basins established downgrade of the site. Once Phase 2 building construction is completed the site will undergo permanent stabilization measures similar to those implemented in Phase 1, and the permanent stormwater system will be established.

Construction staging would occur within the project boundary. The staging areas would be used for contractor parking and supply and equipment storage. Staging areas would be located strategically to provide the most efficient access for construction operations and would be setback an appropriate distance from Humboldt Bay, wetlands, and/or other sensitive areas. Storm drains located within or near Project staging areas would be protected using appropriate Best Management Practices (BMPs).

To access the Project Site, access points to the staging areas would be demarcated for construction vehicles to move directly from New Navy Base Road to Vance Avenue and then to the staging areas.

2.5 Grading and Excavation

A level building pad would be created for each new building. To the extent possible, excavated soil would be reused on-site which would reduce the need for off-hauling. Excavated materials will be screened for contaminants and hazardous materials throughout construction activities. Any contaminated materials encountered will be segregated and disposed of at an appropriate off-site facility. Existing pavement and hardscape would either be pulverized and reused on-site as base material or exported.

Construction at the Project Site would require removal of the existing concrete foundations and brick smokestack to prepare the ground surface for construction. Demolition debris, such as concrete and brick, would be recycled to the extent feasible. Concrete and brick that could be repurposed would be crushed and used for ground densification and structural fill where appropriate. Demolition of concrete and brick will include screening for contaminants and hazardous materials. Impacted materials will not be reused and will be disposed of at an appropriate off-site facility. Material sorting, crushing, and reuse will be conducted in a manner to mitigate dust generation, stormwater runoff, and any other potentially deleterious byproducts. Site grading would be limited to that necessary for facility and infrastructure construction, along with appropriate stormwater and erosion control measures.

Utility trenches would be excavated to bring services to new buildings within the aquaculture facility. The trenches would vary from two to three feet wide and four to six feet deep. Excavated soil would be returned to the trenches to cover the utilities.

Dewatering may be required during excavation, and, if so, would be pumped to an appropriate upland area and infiltrated, or stored in Baker tanks depending on water quality. The designs for foundations, process piping, and utilities are limited to a 12-foot maximum depth below surface to limit any work below the water table or the need for trench dewatering. Any dewatering conducted at the Project Site will take into the potential for contamination and will be handled responsibly and sampled for likely contaminants (SHN 2020).

It is anticipated that sheet piling will be utilized where sufficient area is not available to slope excavations and possibly to limit any dewatering if dewatering is required. Sheet piling will be installed with a vibratory hammer, to an approximate maximum depth of 30 feet below ground surface and will be removed once work in the excavation is complete.

2.6 Construction Stormwater Management

Management of on-site stormwater will be addressed during construction of the facility. Construction activities will be addressed by obtaining coverage under the Construction General Permit Order 2009-0009-DWQ. A Stormwater Pollution Prevention Plan (SWPPP) will be

developed and implemented for the duration of construction activities at the Project Site to manage and reduce the potential for pollution from concentrated stormwater runoff from the site.

Since construction is to be phased, short term stormwater BMPs will be installed and/or modified during each phase of construction to ensure compliance with stormwater discharge requirements. Stormwater affected by construction related activities will be treated by implementing soil stabilization, sediment control, temporary tracking control, wind erosion control, non-stormwater management, and waste management and materials pollution control BMPs, as necessary, throughout the Project Site.

As construction of the site facilities progresses, temporary stormwater BMPs, such as temporary sediment basins, will either be decommissioned due to the area being developed, or finalized and incorporated as part of the permanent stormwater infrastructure.

2.7 Landscape Design

The overall landscape concept is to ground the Project within the context of the Manila dunes. The landscape plan is based on locally appropriate native species that are established in different habitat areas of the Manila dunes, including species from the dune mat, coastal brambles, and forested shore pine vegetative alliances. Extant dune mat and coastal brambles on-site will be enhanced through removal of invasive species and augmented with additional plantings to fill those void spaces. Stormwater management basins will include plantings that mimic seasonal wetlands and plant communities also found in dune environments. Plant species in the landscape palette include shore pine (*Pinus contorta* ssp. *contorta*), red alder (Alnus rubra), wax myrtle (*Morella californica*), seaside buckwheat (*Eriogonum latifolium*), California blackberry (*Rubus ursinus*), twinberry (*Lonicera involucrata*), Western swordfern (*Polystichum munitum*), and Pacific reedgrass (*Calamagrostis nutkaensis*), among others.

2.8 Fencing

Security fencing, likely chain-link, is proposed to enclose the inner campus. The inner campus consists of the areas located between the Project buildings. No new perimeter fencing is proposed.

2.9 Water Intake Measures

There are existing sea chests (water intake structures) at the nearby Redwood Maine Terminal II (RMT II) and Red Tank Docks. Bay water was previously drawn through these sea chests to support mill operations at the Project Site. The HBHRCD is in the process of permitting upgrades to the sea chests that will increase their water withdrawal capacity and add features that reduce environmental impacts, including intake screens that protect juvenile fish, meeting the standards for impingement. The HBHRCD's goal for upgrading the sea chests is to support growth of the aquaculture industry on the Samoa Peninsula by Nordic Aquafarms and other entities. This is a component of an ongoing HBHRCD program to invest in pre-permitting and other support of aquaculture development on the Samoa Peninsula. The program is described in Section 4.21 (Mandatory Findings of Significance).

The sea chest pumps operated by HBHRCD would supply seawater through piping affixed to the existing docks. The piping infrastructure constructed by HBHRCD would extend onshore underground at least 50 feet from the RMT II dock terminus. The aquaculture facility would tie into the sea chest piping at the northeast corner of the RMT II building. The

terrestrial water piping infrastructure would be located within APN 401-112-021 and APN 401-112-024, thus is entirely within the Humboldt County jurisdiction and California Coastal Commission (CCC) appeal jurisdiction.

Final design of the intake water treatment infrastructure within the aquaculture facility is subject to analysis of final source water data currently being collected. There will be separate treatment trains for freshwater and saltwater. The baseline solution for intake water treatment that NAFC operates with includes:

1. First stage drum filter filtration
2. Ozone treatment
3. Fine filtration
4. Ultraviolet (UV-C) dosing

The intake water treatment system will be designed to ensure that sediment, bacteria, and pathogens are not able to enter the facility. Intake water will be monitored on a continuous basis with probes for basic water quality characteristics, temperature, and salinity. Manual testing will also be conducted on a regular basis or under special circumstances for example for bacteria, toxins, or other sources of pollution.

NAFC will be prepared to maintain water quality and fish health within the facility in the event of sudden changes in Humboldt Bay water quality due to seasonal changes, accidental spills, or other unforeseen circumstance. Humboldt Bay has suffered several oil spills in the past. The MV Kure spilled 4,500 gallons of intermediate fuel oil in 1997 and the dredge Stuyvesant spilled another 2,100 gallons in 1999. NAFC has the ability to both drastically reduce water usage as an immediate measure as well as the ability to effectively stop the use of marine water and transition to exclusive freshwater use. The anadromous nature of salmonid biology allows them to flourish in either salt or freshwater. Young salmonids are obligated to live in freshwater. Post smolt salmonids can be raised in fresh, brackish, or full-strength seawater. There are many examples of fish being grown under all of these varying saline conditions both commercially and in research institutes. NAFC prefers to utilize marine water to grow fish. Transitioning to freshwater for an extended period of time would not have any negative impact on the effectiveness of fish health systems or wastewater treatment technology. The former mill utilized large volumes of freshwater and the infrastructure to deliver the water is still in place. For emergency operations the industrial water supply line at the Project Site is capable of providing more water than the facility would need.

2.10 Water Discharge Measures

There will be an advanced wastewater treatment plan with high levels of nutrient removal and biosecurity measures to protect receiving waters. NAFC has never had disease outbreaks in its existing facilities due to strict water treatment regimen and high biosecurity measures, but always takes into account that this conceivably could happen. The facility will be designed to ensure that bacteria and pathogens are not able to enter the facility, grow within the facility, nor enter the ocean through the outfall. The wastewater treatment plant is still in the design phase, but current design includes the following proven technologies:

1. Phosphorous and Nitrogen reduction system (anoxic/bioreactor system)
2. 0.04-micron Ultrafiltration systems (Membrane Bioreactor)

3. A 300 megaJoule (mJ) end of lamp life UV dose before water is discharged
4. Sludge collection, dewatering, and storage system

The total RAS and wastewater design deliver the following performance:

5. 99 percent reduction of total suspended solids, Biochemical Oxygen Demand, and phosphorous
6. 90 percent reduction of nitrogen discharge

These represent the highest treatment standards in the industry. Dewatered sludge (dry matter percentage to be determined based on off-take partners) is moved into sealed holding tanks until out-transport in tank trucks to receiving parties. The aquaculture facility wastewater will be treated on-site prior to discharge off-site. The proposed wastewater treatment process generally illustrated in Image 2-3 and an example wastewater treatment flow diagram is provided in Image 2-4 (note: a final piping and instrumentation diagram will be available once facility design is complete).

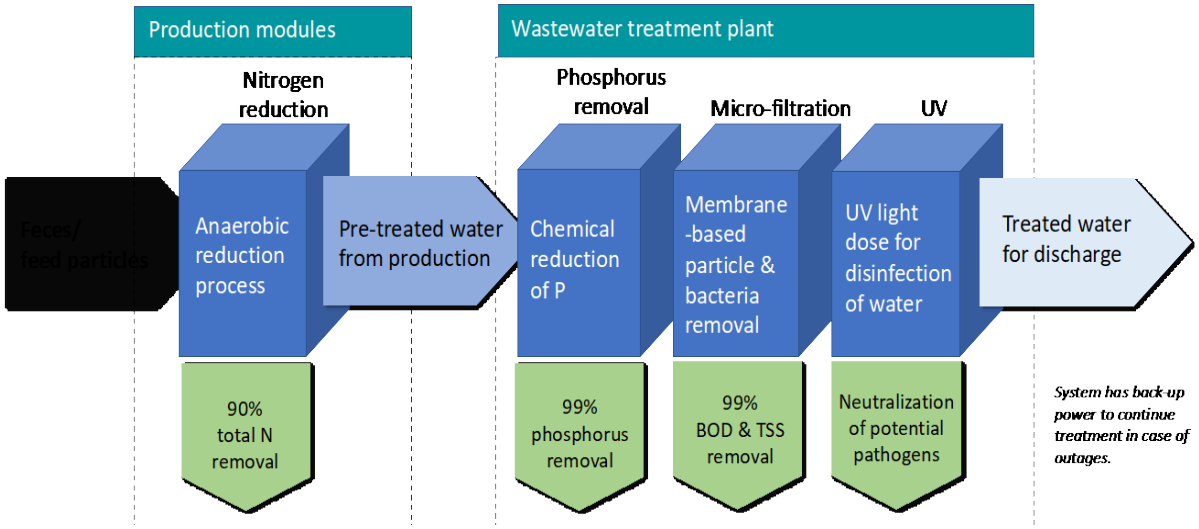


Image 2-3 Wastewater Treatment Process

Total water volume discharged at full operational capacity is estimated at a maximum of 12.5 million gallons per day (MGD). The discharge water will be comprised of 10 MGD seawater sourced from Humboldt Bay and 2.5 MGD freshwater sourced from Humboldt Bay Municipal Water District (HBMWD) Mad River pumping stations and river intake. Freshwater will be approximately 2 MGD of untreated surface water (river intake) and approximately 0.5 MGD treated domestic water (rainy wells). Table 2-3 provides a summary of the constituents and maximum daily loading rates for the outfall discharge effluent.

Table 2-3 Project Daily Maximum Effluent Summary

Effluent	Discharge
Total Water volume	12.5 MGD
Total Suspended Solids (TSS)	185 KGD
Biochemical Oxygen Demand (BOD)	162 KGD
Total Nitrogen (TN)	673 KGD
Ammonium Nitrogen (NH4)	0.07 KGD
Phosphorus (P)	5.8 KGD

Notes:
MGD = Millions of Gallons per Day
KGD = Kilograms per day

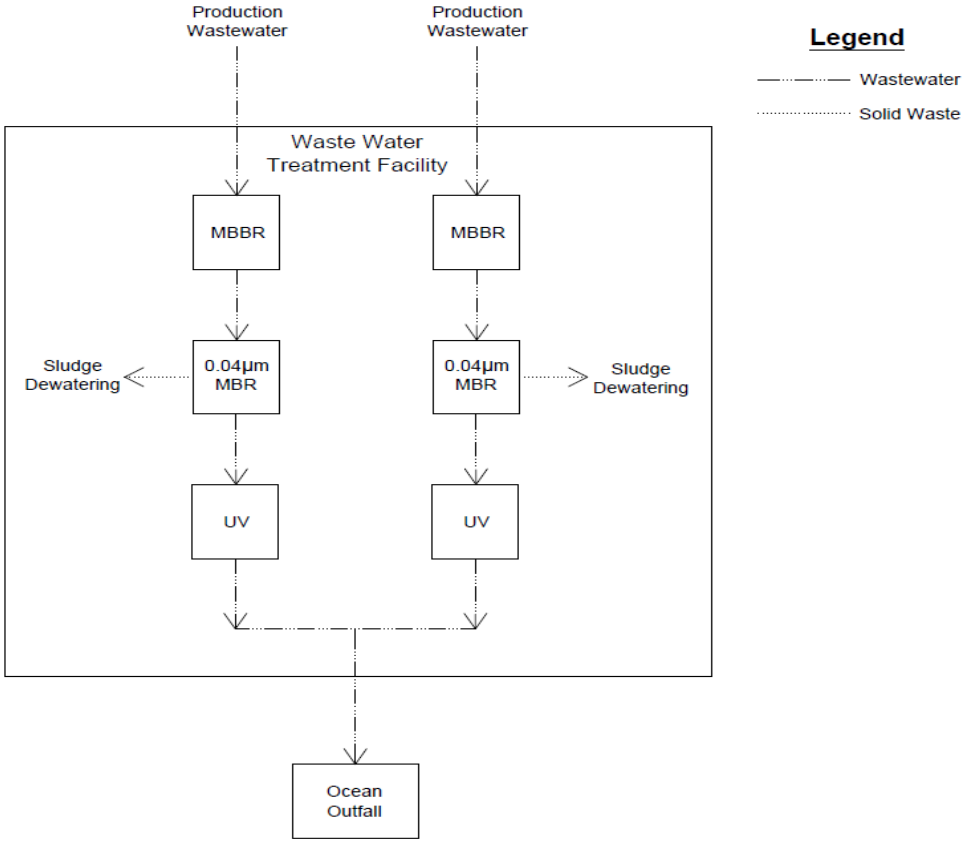


Image 2-4 Example Wastewater Flow Diagram

2.11 Project Operations

An overview of current site logistics designs is provided on Figure 4 – Figure 9 (Section 2.13).

2.11.1 Water and Utility Infrastructure

The facility will use both freshwater and saltwater sources to achieve optimal salinity levels for the fish and the RAS system. Both freshwater and saltwater water sources are addressed in the following subsections.

Freshwater

Freshwater is to be delivered by the HBMWD through existing infrastructure to the Samoa Peninsula. The HBMWD has significant excess capacity for freshwater from the Mad River. The HBMWD is currently conducting a project to ensure necessary upgrades of this infrastructure for NAFC and other future users at the Peninsula.

Freshwater is provided to the Project Site by the existing HBMWD 1-MG water storage tank, located west of the Project Site, which previously supplied water to the pulp mill. The existing on-site water service would be connected to the new buildings for potable use, fire sprinklers, and irrigation. Water service to the buildings would connect to an existing underground water line running from the 1-MG tank to the Project Site.

Saltwater

As described in detail above, the existing HBHRCD sea chests on the RMT II and Red Docks will provide saltwater withdrawal and supply to the Project Site. The HBHRCD is in the process of permitting upgrades to the sea chests that will increase their water withdrawal capacity and add features that reduce environmental impacts, including intake screens that protect juvenile fish. Following the infrastructure upgrades, the Project will connect with the sea chest piping on HBHRCD property in proximity to the northeastern corner of the RMT II facility.

There is a salt water well within the NAFC lease area, 340 feet in total depth northeast of the clarifiers. NAFC has no plans to use the well nor disturb the area where the well is located. If it is determined that the area of the well needs to be disturbed to facilitate construction, the well be properly decommissioned before any disturbance of the area.

Water Treatment

Water treatment by NAFC of intake water and discharge water will take place in on-site buildings. All infrastructure will be placed indoors. Dewatered sludge (feces and feed) rich in nutrients will be a byproduct of the wastewater treatment process. The sludge will be recycled for other uses such as fertilizer, biogas, etc. The sludge is stored in sealed tanks for regular out-shipment and will thus not result in local odors. The other output is filtered and treated water that will be discharged through the existing outfall pipe that extends 1.55 miles (8,200 feet) offshore from the Samoa Peninsula into the Pacific Ocean.

The water treatment building will be connected to existing water infrastructure that is located on the surrounding HBHRCD property. The aquaculture facility will utilize the existing outfall pipe owned by the HBHRCD adjacent to the Project Site. An underground connecting pipe

will be installed by NAFC connecting the proposed wastewater treatment facility (Building 5) to the existing outfall pipe .

2.11.2 Utility Improvements and Services

Sanitary Sewer

Sanitary sewer service is not currently provided to the Project Site. An existing leach field is located at the southern portion of the Project Site as shown on Figure 2 (Section 2.13). The existing leach field is currently utilized by the RMT II and ancillary facilities occupying the Project Site. The leach field was designed and approved to handle a flow of 14,700 gallons per day (gpd) of domestic wastewater generated by the employees of the pulp mill while in operation. The leach field was designed and constructed as two separate but adjacent units. Each of the two leach field units has a distribution box and 17 4-inch diameter, 90-foot long perforated pipe leach lines, spaced at 10 feet on center. In 2014 HBHRCD proposed and received approval to separate the two units with one designated to receive domestic wastewater and the other receiving process wash water from RMT II operations. The capacity of the leach field utilized for domestic wastewater has a total capacity of 7,350 gpd. Current usage of the domestic wastewater leach field from RMT II and ancillary facilities operations is estimated to be between 363 gpd to 570 gpd based on current water usage from HBMWD and employee/fixture counts. Domestic wastewater production from NAFC during Phase 1 operations on the Project Site has been estimated to be less than 900 gpd, leaving a minimum excess capacity in the domestic wastewater leach field of 5,880 gpd.

The existing leach field would be used by the Project temporarily during construction and operation of Phase 1. The leach field use will be discontinued once construction begins on Phase 2 production modules, as the second production module building is proposed to be located over the existing leach field. Once the Phase 2 production modules are under construction, the Project Site structures will be connected to the Peninsula Community Services District (PCSD) sewer line that will be constructed west of the Project Site.

Electrical, Natural Gas, and Telecommunications Services

Electrical service is currently provided to the Project Site by Pacific Gas and Electric Company (PG&E) transmission lines. PG&E currently has a 4-inch steel natural gas service line located adjacent to the electrical substation at the Project Site. The gas line is not currently being utilized. Telecommunications service would be provided to the Project by AT&T or Suddenlink. Modernization and upgrade of the existing substation is planned to include expanding the total capacity of the switchyard to 35 MW to be utilized by NAFC and HBHRCD RMT II operations. Connections to the new buildings would be made from the existing electrical switchyard located at the northwest portion of the former pulp mill site. Electrical utilities would be extended to the new building within multiple trenches or above-ground transmission lines. Electrical connections would extend from the existing switchyard to new transformer(s) to be installed from the switchyard adjacent to the new structures.

Access Roads

The Project Site is accessed from Vance Avenue via New Navy Base Road and LP Drive. Repair, resurfacing, and striping upgrades of Vance Avenue and LP Drive to support site access, construction, and operation is expected. Significant expansion of the paved surface of Vance Avenue is not expected through the repair and resurfacing process. Temporary

signage along Vance Avenue will be provided as needed during construction activities, then permanent signage installed as appropriate for operations.

2.11.3 Handling of Waste Streams

NAFC operations maintain the goal that all waste resources be recycled for secondary uses. The NAFC approach to handling of waste streams at aquaculture facilities is to assess potential off-take options in the region and based on that enter into agreements for off-take or to develop NAFC refinement solutions. For this facility, the following waste streams will be further clarified in the future permitting stage:

1. Processing Coproducts (heads, racks, viscera, etc.) are sorted automatically in the processing steps and stored in chilled sealed containers within the processing area. These are protein resources that have an economic value in pet food, biotech, supplements industry, and more. It can also be used in biogas production. It is estimated that the facility will produce between 8,000 to 12,000 metric tons of processing waste annually when fully operational. Processing coproducts will be stored in chilled sealed containers, maintained as food grade products, and shipped on an ongoing basis from the facility by truck.
2. Sludge can be dewatered to different dry matter levels depending on final use. The most likely uses in this case will be fertilizer/soil enhancement, biogas, or composting. This is also an attractive input into microalgae production. Sludge will be shipped off-site by truck with the facility producing in the range of 2 to 4 trucks daily at full production.
3. Fish Ensilage Mortalities for NAFC facilities are very low, however fish do die and are culled for a variety of reasons. In NAFC facilities, dead fish are ground and stored in storage tanks with a weak acidic solution to maintain a pH of 4 to prevent odor. The final product will have a variety of secondary use opportunities.
4. Domestic Wastewater from the proposed facility is estimated to produce approximately 1,500 gpd at full buildout, and less than 900 gpd for Phase 1. The site currently features an active leach-field with sufficient capacity to accommodate Phase 1 operations. It is expected that well before Phase 2 comes online the facility will be connected to the Peninsula Community Services District (PCSD) sewer line that will be constructed west of the Project Site. It is important to note that the facility's domestic wastewater will not include captured water from the facility floor drains, which will be piped to the on-site wastewater treatment facility.

2.11.4 Biosecurity Measures

NAFC facilities have extensive biosecurity measures in place to protect the fish and the surroundings which are described in detail below.

Hatchery Phase

All incoming eggs will have a health certificate with testing for all pathogens of concern. Eggs and nursery fish will be kept under quarantine from the remainder of the facility, with their own dedicated RAS systems. The water from this operation undergoes thorough biosecurity treatment. Eggs will be certified pathogen free by the source hatchery prior to shipping. All eggs shipped will be disinfected in an iodophor solution twice: prior to shipping and upon entry to NAFC's quarantine facility. Eggs will be held at depressed temperatures to prevent development while appropriately screening for pathogens of regulatory concern

is conducted. Screening procedures will be conducted with guidance from and in collaboration with independent, certified fish health professionals and regulatory officials. Once screening protocols have adequately demonstrated freedom of pathogens of regulatory concern, the eggs will be allowed to hatch.

NAFC's quarantine facility will be in the hatchery building (Building 3) separate from all on-growing units (production modules). This building consists of separate rooms (sub-facilities) dedicated to the rearing of four life stages: eggs, fry, parr, and smolt. Each sub-facility, including the quarantine will operate on an independent RAS, which will also be separated from one another by walls. Each sub-facility will be separated by biosecurity gates, where hand sanitizing stations and footbaths will be placed. Personnel entering the quarantine units will be restricted to a designated personnel entrance leading to a dedicated changing room. Here staff will change clothing and footwear and wash and sanitize hands prior to and upon completion of work in the quarantine area and will adhere to strict personnel movement plans. Lab tests are conducted on samples from each cohort to detect any known pathogens. Should any pathogen be detected, then either a vet prescribed and administered treatment or destruction of the fish and proper disposal will occur. Certified healthy fish are transferred to the next growth stage. Fish are monitored for any sign of pathogens or distress on a daily basis by our trained employees in the remaining hatchery stage.

The quarantine unit will consist of a reception unit where the iodophor disinfection testing will take place. The eggs will thereafter be transferred to the hatching cabinets where the quarantine will be carried out.

Normal practice will be for quarantine of a cohort to end after the required screening results are attained in the hatchery. However, the layout of the hatchery facility effectively enables isolation and implementation of quarantine protocols in any of the sub-facilities at any time.

Grow-Out Phase

Fish will be monitored on a daily basis for any signs of unusual behavior. All fish mortalities are inspected and sent for lab testing in cases where there are concerns over possible pathogen. Mortalities collected within the grow out facility will be stored in a weak acidic solution. During the growth stage, each module operates on a dedicated RAS system effectively isolating each module from other modules. This would prevent any biosecurity issue that may arise from spreading to other systems and limiting exposure and remediation measure to a relatively small group. Although there have never been disease outbreaks in NAFC facilities, preemptive and containment measures remain the highest priority in the design, standard operating procedures, staff training, and partnerships.

Intake and Discharge Water

Both intake water and discharge are subjected to strong biosecurity measures to prevent intake or discharge of pathogens. Both fresh and saltwater intakes will be subjected to fine filtration and UV disinfection prior to being introduced to the production facilities. Within each RAS core, a portion of the treated water will be continuously treated with ozone dosing and UV. Wastewater from the production tanks will be directly piped to the wastewater treatment plant prior to discharge, where it will be subjected to 0.04-micron ultrafiltration and a 250-300mJ ELL UV dose before discharge.

Personnel and Visitor Policies

Staff at rearing facilities will be limited to designated personnel. Access to these facilities will be restricted and efforts will be made to limit the movement of personnel between rearing facilities on any given day. A formal personnel movement plan will be developed and implemented. This movement plan will be posted in all units for quick reference. All personnel will move through biosecurity gates where proper sanitation and hand washing will be performed upon both entrance to and exit from the units. Touch free hand washing stations will be used. Operational duties in the hatchery facility and personnel performing them will generally be separate from those in the on-growing facilities (modules).

Non-staff visitation to rearing facilities will be limited with a focus on ensuring visitors have not visited other aquariums or aquaculture facilities within 48 hours. Public visitation interests will be served by a visitor's area at the front of the property, reducing the demand for non-personnel access. Access of visitor's area staff to production facilities will be limited.

Veterinary

NAFC will work with approved fish health professionals and state regulators to establish and implement a fish health management plan including good husbandry practices, vaccination regiments, and pathogen screening protocols for diseases of regulatory concern. The facility will undergo regular inspections from veterinarians experienced in fish health management. This program will be consistent with the requirements and intent outlined in California regulations.

2.11.5 Fish Escape Prevention

NAFC facilities have a series of physical barriers in place to eliminate risk of fish escape, with the final one being a sub-micron filtration stage before discharge of process water.

The NAFC facility will house fish no closer than 300 feet from the water in access controlled buildings. Fish are moved between buildings using underground pipes that are solely used to transport fish. NAFC employs many redundant fish escape barriers in each system to prevent fish passage. The barriers on each system are designed specifically to prevent fish passage based on the life stage and size of the fish. Other very robust measures in place, such as the bioreactors and each system's 20-40 micron mesh drum filter screens and 0.04 micron mesh filters at the wastewater treatment plant, are integral parts of the water treatment processes and prevent fish passage out of the system.

Each system is equipped with jump screens to prevent the fish from being able to jump out of the tank and will also work to contain them in the case of sloshing during an earthquake. The floor drains are fitted with grates specifically designed to prevent fish passage. Secondary grates sized to prevent fish passage are installed in the drain collection wells. All floor drains are sent to the wastewater treatment plant for the same rigorous treatment as production water. Furthermore, all transport of fish within the Project Site will occur via a contained piping system, which prevents them from ever being exposed to the external environment. The site-specific seismic study is underway and will be used to guide our infrastructure design to ensure resiliency in a seismic event.

2.12 Environmental Setting

The Samoa Peninsula is bounded on the west by the Pacific Ocean and the east by Humboldt Bay. The Project Site is located on the eastern shore of the Samoa Peninsula, east of New Navy Base Road, and due west, across Humboldt Bay, from the City of Eureka. The Project Site is accessed from Vance Avenue via New Navy Base Road and LP Drive. The Project Site and surrounding area are shown on Figure 1 (Section 2.13).

The Project Site consists of portions of one parcel of which approximately 36 acres would be used for the land-based finfish aquaculture facility and associated infrastructure. The cumulative area, Assessor Parcel Number (APN) 401-112-021, where Project construction activities are planned to occur, shall herein be defined as the Project Site. For the purposes of this section, the environmental baseline utilizes current day, existing site conditions.

The Project Site is owned by the Humboldt Bay Development Association, Inc. (HBDA), leased by the HBHRCD, and shown in Figure 2 (Section 2.13). The parcel comprising the Project Site will be leased by NAFC under lease agreements with the HBHRCD. The NAFC lease area is irregular in shape, does not have frontage on New Navy Base Road, and is bisected by Vance Avenue. Centered along Vance Ave there is a fifty-foot-wide non-exclusive easement for ingress, egress, and public utility purposes and a 5-foot-wide easement for utility purposes lying adjacent to and parallel with the non-exclusive easement (Figure 4 and Figure 10 in Section 2.13). The combined 60-foot easement extends approximately 15 feet beyond the edge of the paved surface on both sides of Vance. All facility buildings will be located to the east of the Vance Avenue easement. The building closest to Vance Avenue will be the processing/administrative building located approximately 23 feet east of the edge of the road and 8 feet east of the edge of the easements.

The Project Site is situated in a developed industrial area of the Samoa Peninsula where timber processing and pulp mill and timber-related industrial operations have historically occurred for more than 50 years. The Project Site generally consists of remnant pulp mill infrastructure and concrete foundations associated with previously demolished pulp mill structures. The eastern portion of the parcel supports ongoing coastal-dependent industry within the Redwood Maine Terminal II (RMT II) that would not be disturbed by the Project.

The Project Site maintains a generally consistent elevation across the site, ranging from roughly 15 to 20 feet above mean sea level (MSL), then slightly increasing in elevation along the western portion of the site, ranging from approximately 20 to 25 feet above MSL. The topography of the western Project Site boundary, located west of Vance Avenue, gradually transitions into dune swales and the former Samoa Landfill (now capped) west of Vance Avenue. Vance Avenue is separated from New Navy Base Road by 300 to 700 feet of sand dunes sporadically intersected by unpaved access roads.

The parcel includes existing infrastructure some of which will remain to support ongoing commercial operations at the Project Site while the majority will be demolished for the proposed Project. Additionally, specific existing pulp mill structures are proposed to be overhauled and utilized by the Project. Image 2-1 provides an overview of existing structures and their placement on the pulp mill.

2.12.1 Project Regulatory Setting

The Project Site is located in the California Coastal Zone, with primary permitting jurisdiction of Humboldt County. The Humboldt County Local Coastal Program jurisdictional limit aligns with the eastern Project Site parcel boundaries that border Humboldt Bay. See Figure 3 (Section 2.13) for a depiction of the Project Site parcel boundaries and jurisdictional limits of the Coastal Commission and the County of Humboldt. Environmental permits, agency approvals, and associated documentation will be filed with the appropriate regulatory agencies in association with the Project. Table 2-4 summarizes the anticipated permits, consultations, and approvals from federal, state, and local agencies.

Table 2-4 Anticipated Regulatory Permits and Approvals

Agency	Permit or Approval	Regulated Activity
Humboldt County	California Environmental Quality Act (CEQA) Initial Study/Mitigated Negative Declaration (IS/MND) (anticipated)	State environmental protection requirement
Humboldt County	Coastal Development Permit (CDP)	Permitting Development (demolition, grading and construction)
Humboldt County	Building Permit	Demolition, construction, installation or alteration of structures
Humboldt County	Grading Permit	> 50 cubic yards per parcel, among other thresholds
Humboldt County	AB52 Consultation Documentation	Projects potentially affecting Tribal cultural resources
Humboldt County	Loading Space Exception Petition	Facilities with less than one loading space for each 20,000 ft^2 of floor area
Humboldt County	Encroachment Permit	Improvements and signage on New Navy Base Road and LP Drive
California Coastal Commission	Coastal Development Permit (CDP)	Compliance of discharged effluent with the Coastal Act
North Coast Regional Water Quality Control Board (NCRWQCB)	National Pollutant Discharge Elimination System (NPDES) Waste Discharge Permit Stormwater Pollution Prevention Program (SWPPP)	Construction >1 acre of ground disturbance
North Coast Regional Water Quality Control Board (NCRWQCB)	National Pollutant Discharge Elimination System (NPDES) Waste Discharge Permit	Water quality of effluent discharged to the Pacific Ocean

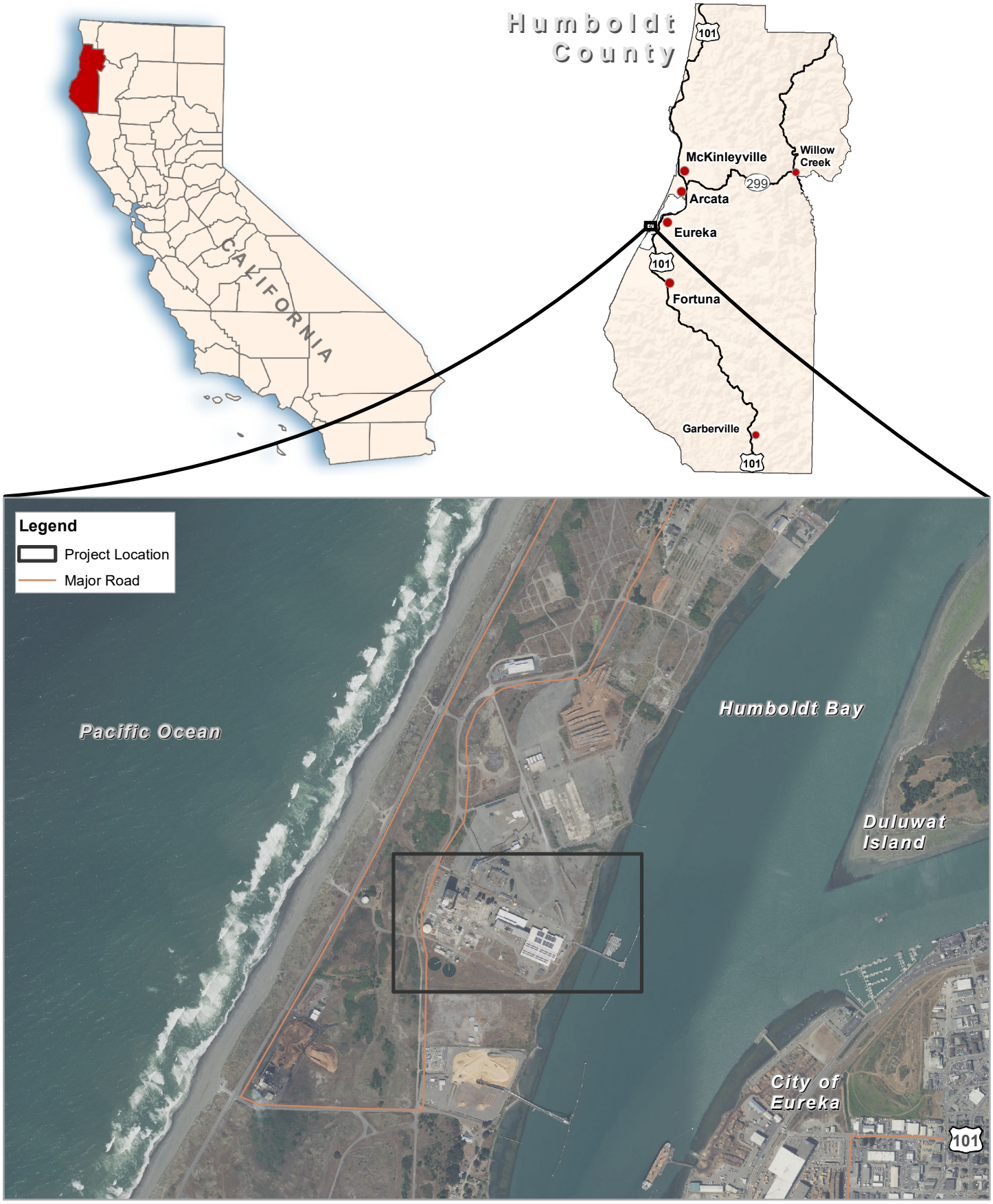
Agency	Permit or Approval	Regulated Activity
North Coast Regional Water Quality Control Board (NCRWQCB)	Remedial Action Work Plan and Soil/Groundwater Management Contingency Plan	Handling, testing, disposal and/or reuse of site materials. Including soil and groundwater.
North Coast Unified Air Quality Management District (NCUAQMD)	National Emissions Standard for Hazardous Air Pollutants (NESHAP) notification	Facility demolition and/or asbestos abatement; backup generator emissions
North Coast Unified Air Quality Management District (NCUAQMD)	Stationary Source Air Quality Permit	Operation of stationary internal combustion engine
California Department of Fish and Wildlife	Aquaculture Registration and Egg Importation	Importation of eggs into California from other states or countries

Notes:

1. AB52 = Assembly Bill 52

IS/MND = Initial Study/Mitigated Negative Declaration
> = Symbol signifying “greater than”

2.13 Project Description Figures



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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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GHD

Nordic Aquafarms California, LLC
Samoa Peninsula Sustainable Aquaculture Development Project
Samoa, Humboldt County, California

Vicinity Map

Project No. **11205607**
Revision No. **-**
Date **Apr 2021**

FIGURE 1

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Data source: 2018 NAIP imagery; Sources: Esri, USGS, NOAA. Created by: jclark2

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Feet

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Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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GHD

Nordic Aquafarms California, LLC
Samoa Peninsula Sustainable Aquaculture Development Project
Samoa, Humboldt County, California

Project No. 11205607
Revision No. -
Date Apr 2021

Proposed Site Layout

FIGURE 2

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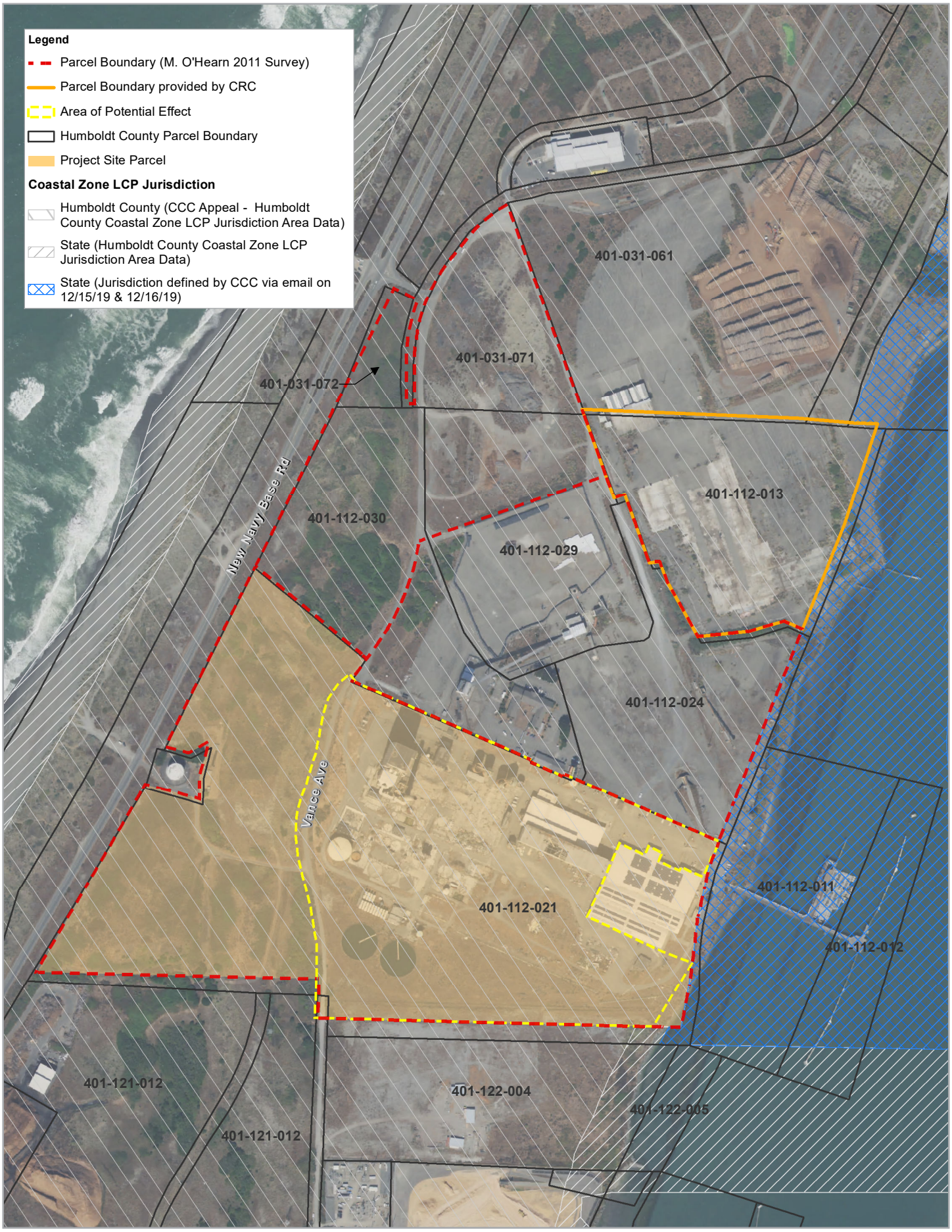
Print date: 14 Apr 2021 - 17:41

Data source: Project design elements, April 1st, 2021; APE, June 12, 2020; USDA, NAIP Imagery, 2018; Humboldt County Parcel Dataset, 2019. Created by: jclark2



Paper Size ANSI A

0 150 300 450 600

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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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GHD

Nordic Aquafarms California, LLC
Samoa Peninsula Sustainable Aquaculture Development Project
Samoa, Humboldt County, California

Jurisdictional Boundaries

Project No. **11205607**
Revision No. **-**
Date **Apr 2021**

FIGURE 3

N:\US\Eureka\Projects\561\11205607\GIS\Maps\Deliverables\Project_Description\11205607_003_Site_Boundaries_RevF.mxd
Print date: 05 Apr 2021 - 13:38

Data source: APE, June 12, 2020; USDA, NAIP Imagery, 2018; Humboldt County Parcel Dataset, 2019; Site Survey. Kelly-O'Hern Assoc., 2012; Humboldt County. Coastal Zone LCP Jurisdiction, 2017 . Created by: jclark2

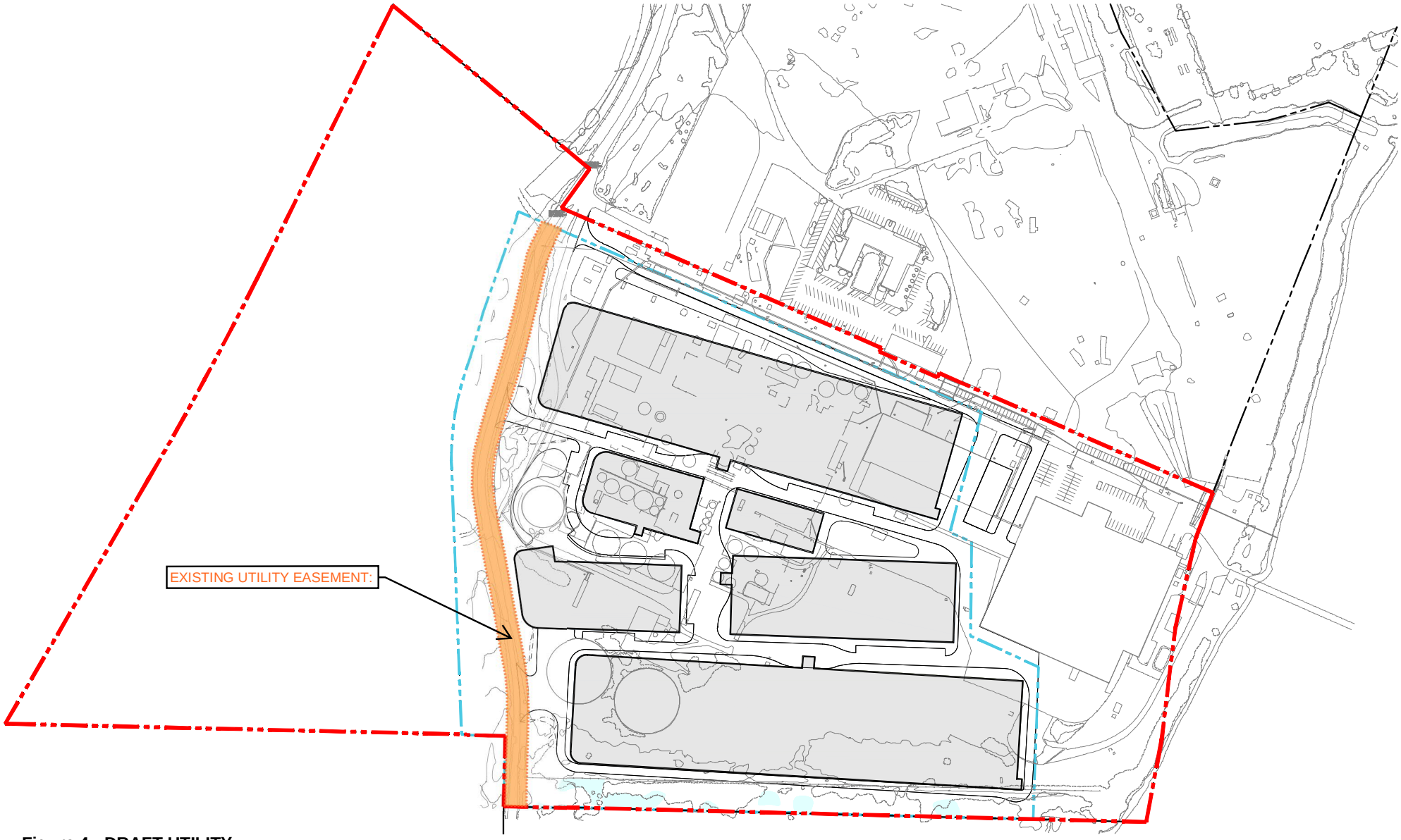

Figure 4: DRAFT UTILITY EASEMENT LOCATION

Nordic Aqua Farms, Samoa, California

April 2021

NORDIC AQUAFARMS

SUSTAINABLE AQUACULTURE

SMRT PROJECT NO. 19120

0 50' 100' 200' 300'

N

SMRT

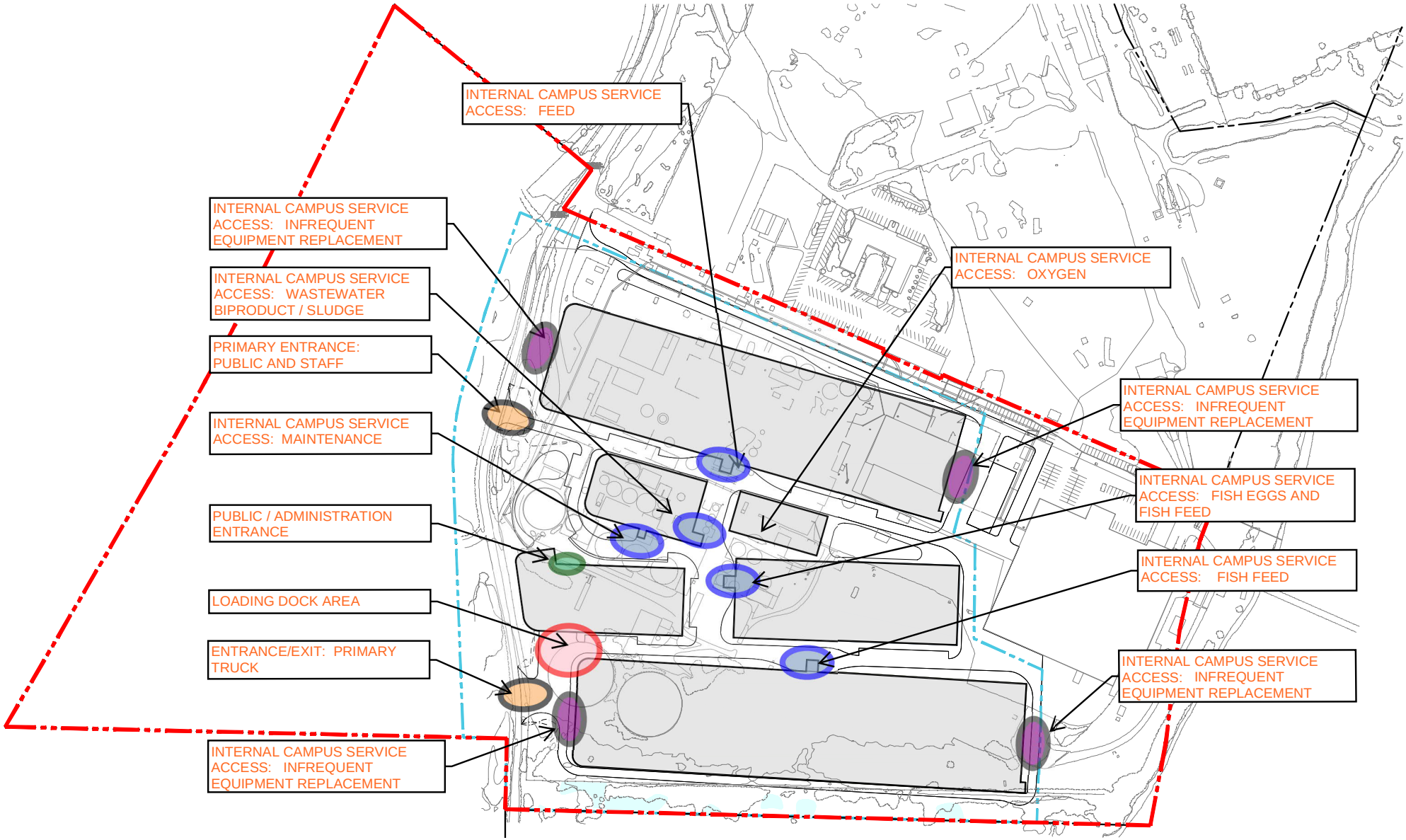

Figure 5: DRAFT SITE LOGISTICS
Nordic Aqua Farms, Samoa, California
April 2021

NORDIC AQUAFARMS
SUSTAINABLE AQUACULTURE

SMRT PROJECT NO. 19120
0 50' 100' 200' 300'
N

SMRT

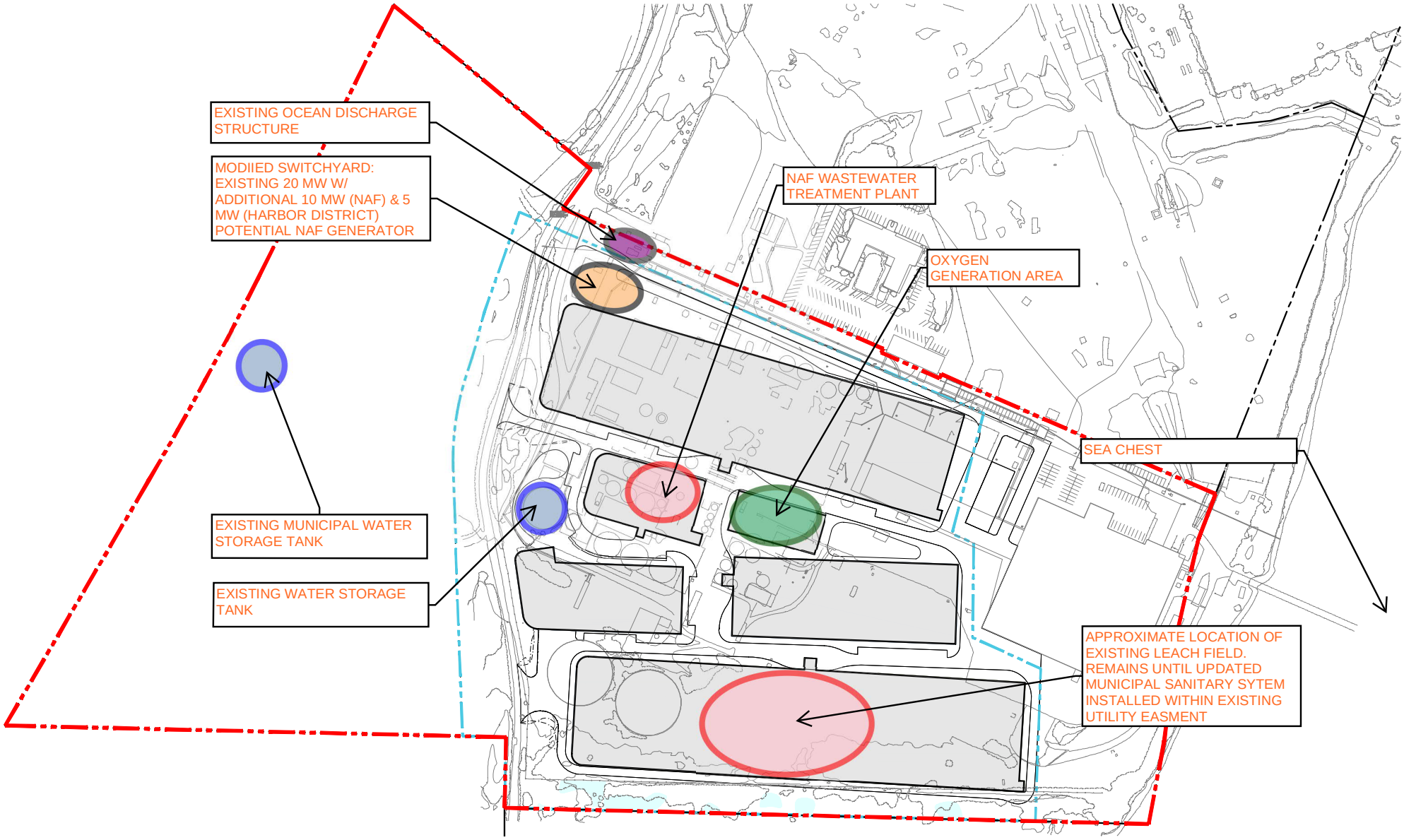

Figure 6: DRAFT SITE INFRASTRUCTURE
Nordic Aqua Farms, Samoa, California
April 2021

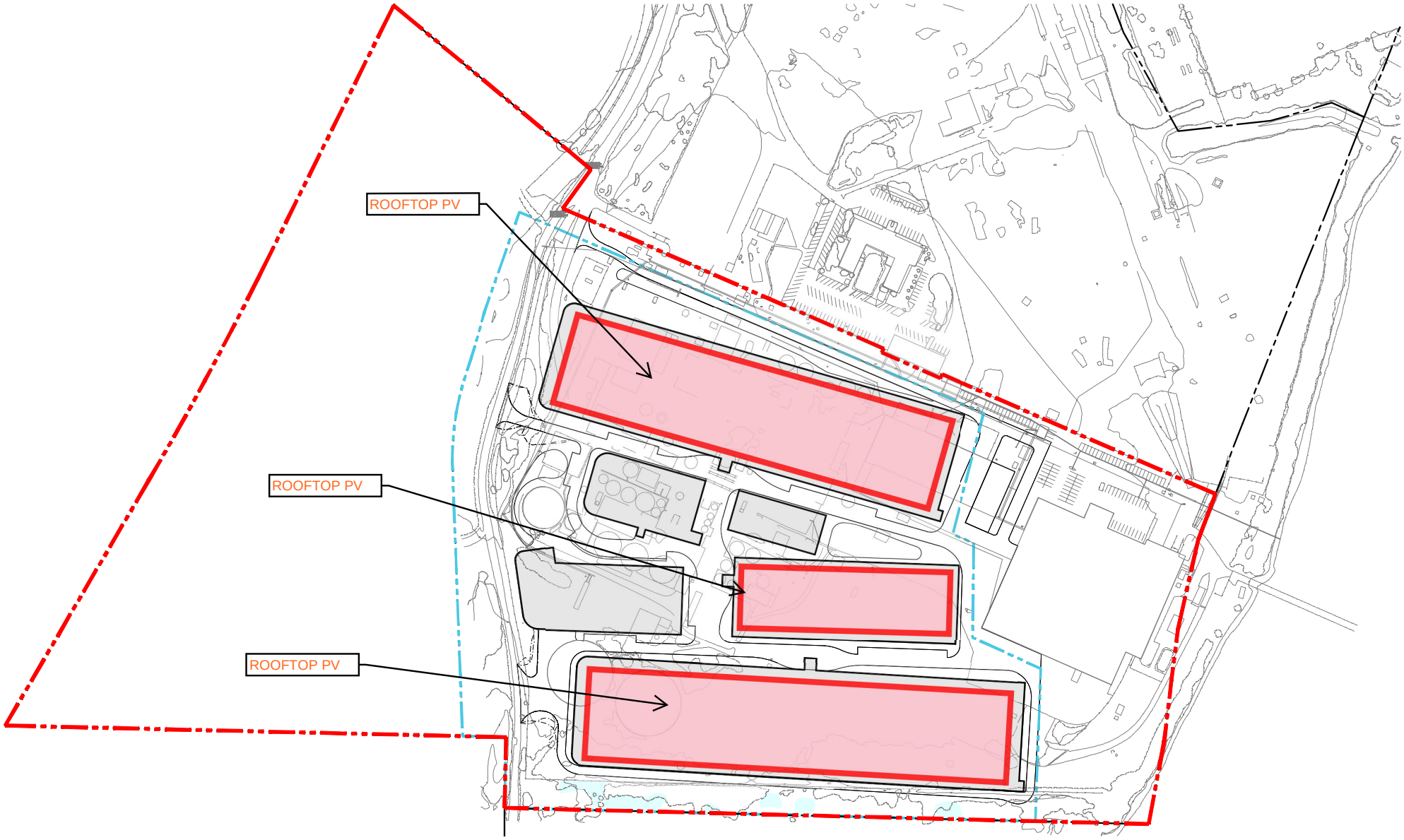

Figure 7: DRAFT ROOFTOP PV LOCATIONS
Nordic Aqua Farms, Samoa, California
April 2021

NORDIC AQUAFARMS
SUSTAINABLE AQUACULTURE

SMRT PROJECT NO. 19120
0 50' 100' 200' 300'
N

SMRT

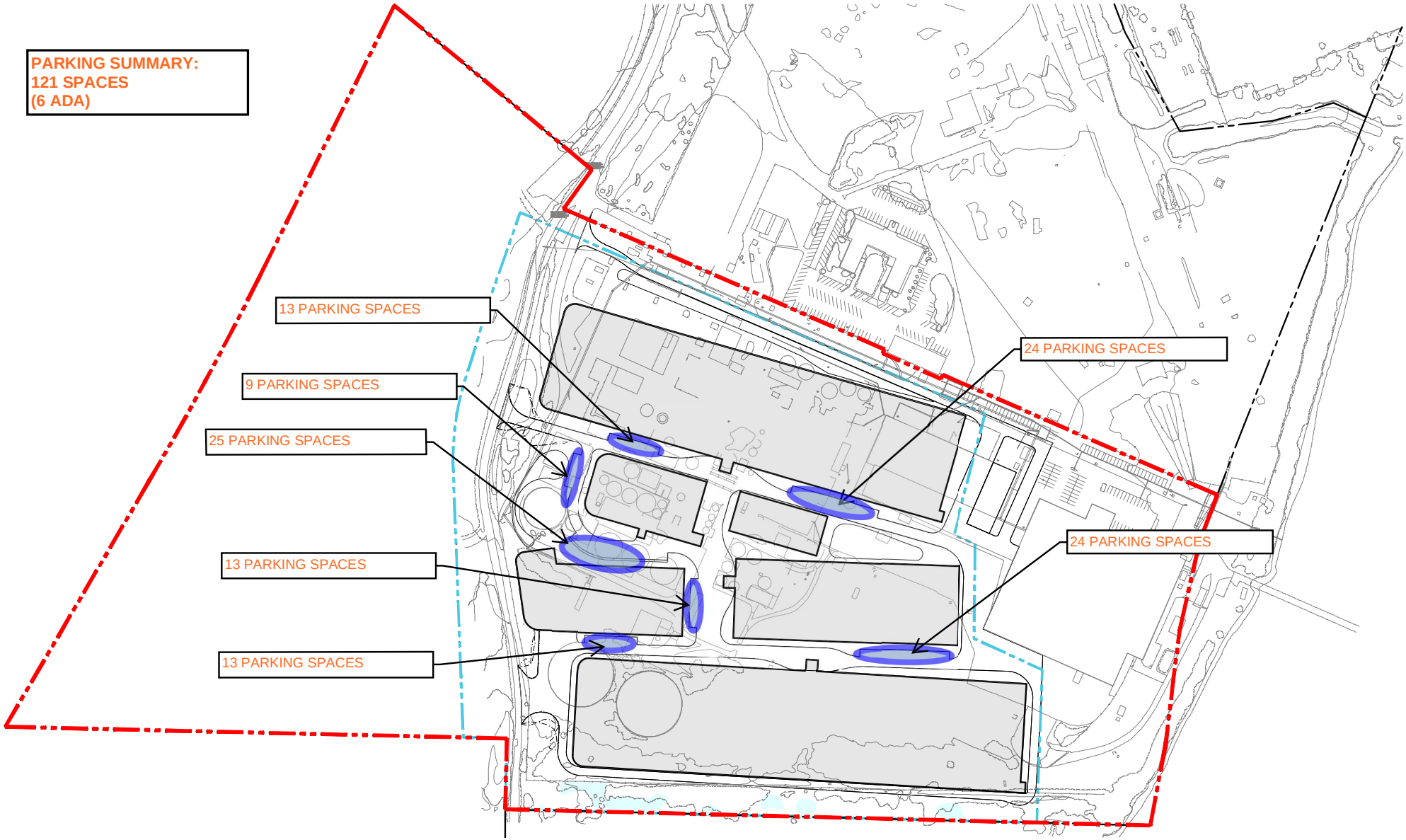

Figure 8: DRAFT PARKING PLAN
Nordic Aqua Farms, Samoa, California
April 2021

NORDIC AQUAFARMS
SUSTAINABLE AQUACULTURE

SMRT PROJECT NO. 19120
0 50' 100' 200' 300'
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SMRT

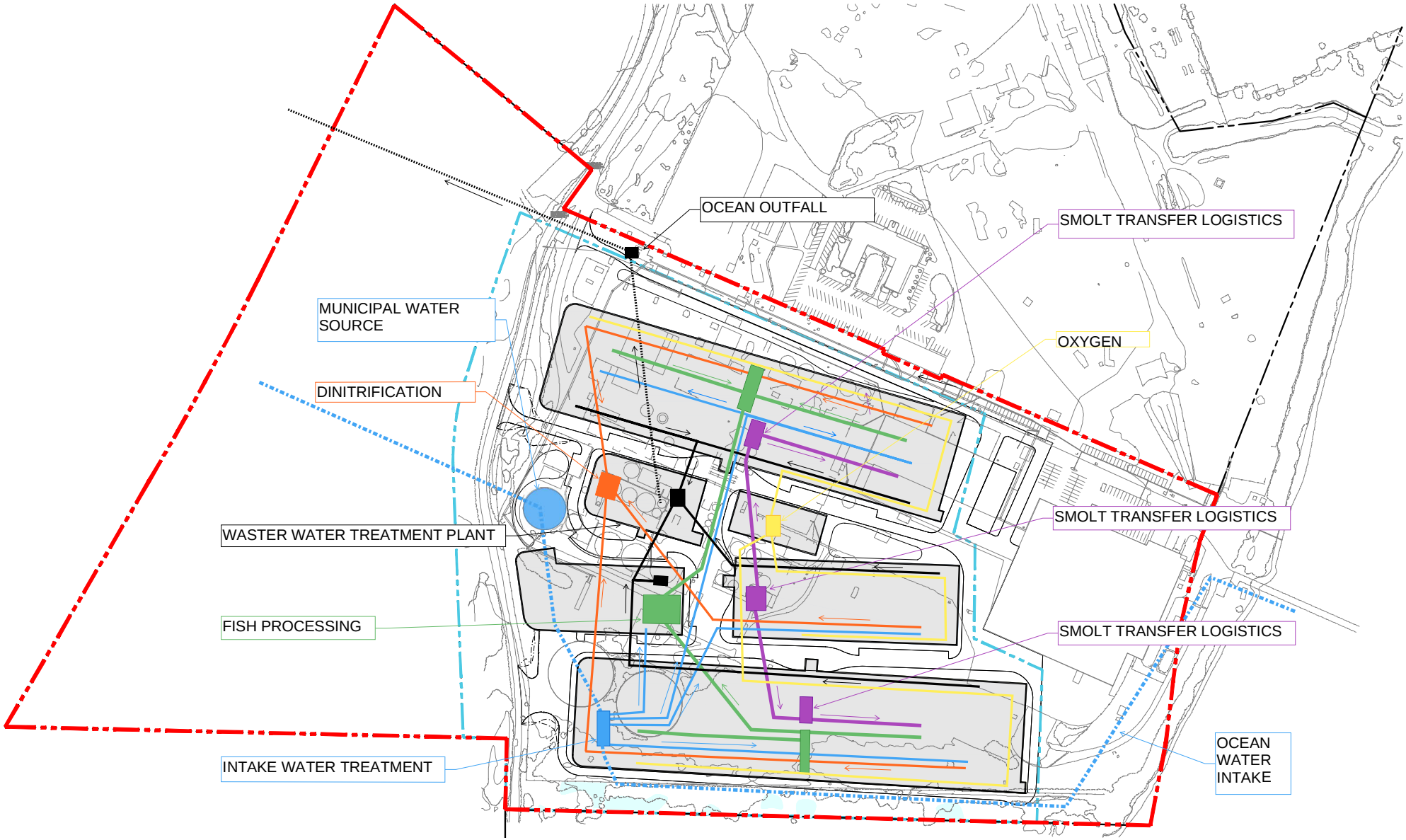


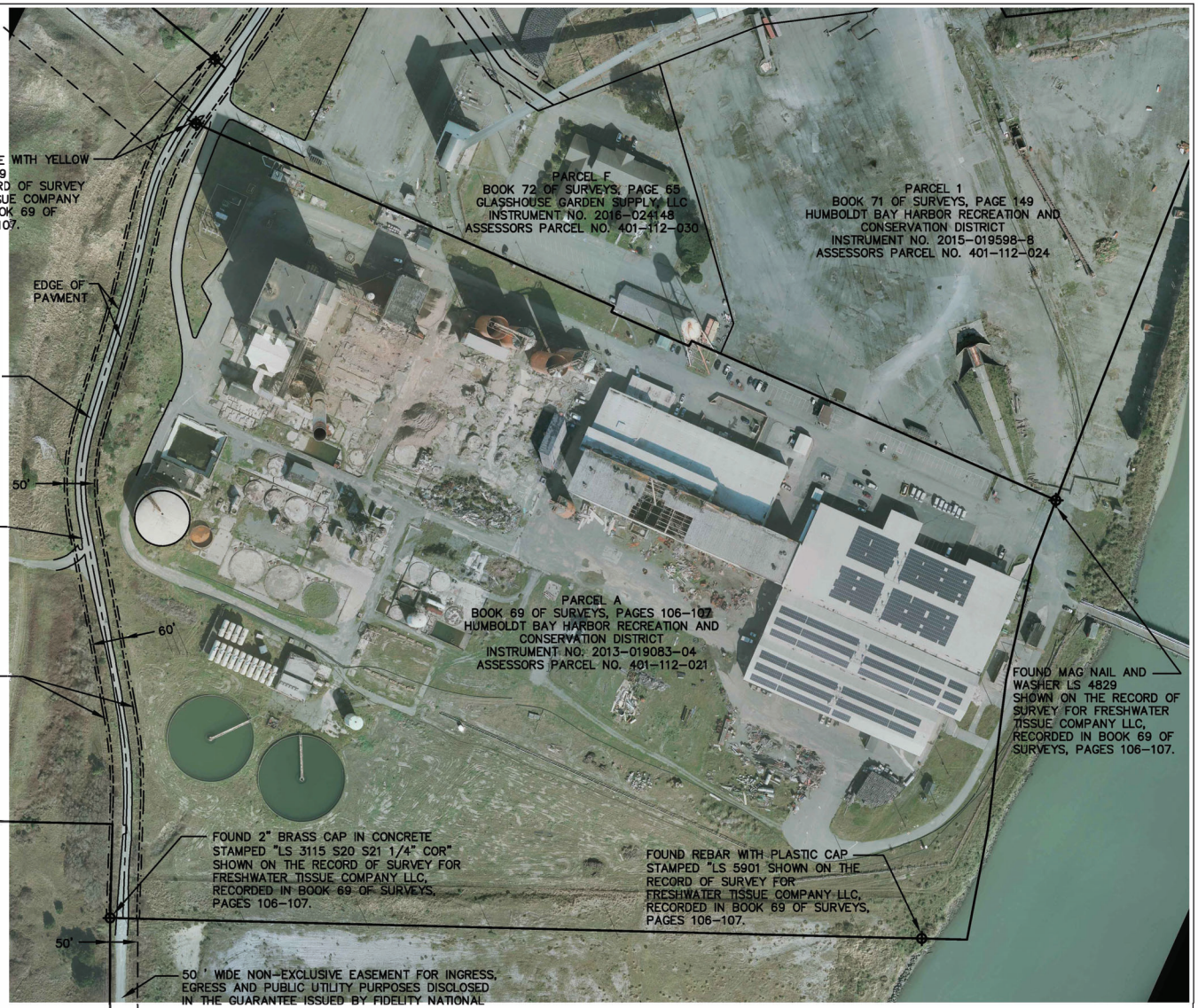
Figure 9: CONCEPT PIPING LAYOUT
Nordic Aqua Farms, Samoa, California
April 2021

NORDIC AQUAFARMS
SUSTAINABLE AQUACULTURE

SMRT PROJECT NO. 19120
0 50' 100' 200' 300'
N

SMRT

NOTE:
ADDITIONAL EASEMENTS DISCLOSED IN THE GUARANTEE ISSUED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY DATED MAY 18TH, 2020 AT 7:30 AM AFFECT PORTIONS OF PARCEL A NOT MAPPED THIS SURVEY.



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1"=200 FEET

CERTIFICATION

THIS PLAT REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN JUNE, 2020.

Matthew T. Herman

MATTHEW T. HERMAN PLS 8335 DATE

PROFESSIONAL LAND SURVEYOR MATTHEW T. HERMAN Preliminary Exp.12-31-21 8335 STATE OF CALIFORNIA

SHN	Nordic Aqua Farms Samoa, California	Figure 10: Boundary and Easement Plat SHN 019146
	June 2020 | 019146–RECORD GND	Figure 10

3. Environmental Factors Potentially Affected

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

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

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

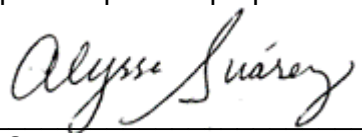
☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would be prepared.

☒ I find that although the proposed Project could have a significant effect on the environment, there would not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION would be prepared.

☐ I find that the proposed MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect: (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect: (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.



4/23/2021

Alyssa Suarez
Planner I, County of Humboldt

Date

4. Environmental Analysis

4.1 Aesthetics

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the Project:				
a) Have a substantial adverse effect on a scenic vista?			✓	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public view of the site and its surroundings? (Public Views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?			✓	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			✓	

Impact Analysis

a) Have a substantial adverse effect on a scenic vista? (Less-than-Significant)

The Project Site is located on the Samoa Peninsula adjacent to Humboldt Bay. As defined in the Humboldt Bay Area Plan (Local Coastal Plan), the Project Site is not located in an area defined as a Coastal Scenic Area or a Coastal View Area. The Pacific Ocean and associated dune complex are located due west, opposite New Navy Base Road. Vegetated sand dunes are located on either side of New Navy Base Road, near the Project Site.

Existing abandoned and dilapidated industrial infrastructure, including the former pulp mill smokestack, currently form the visual character of the Project Site. The smokestack is visible from as far north as Arcata, as well as the communities of Eureka, Humboldt Hill, and Loleta. The smokestack and boiler building are also visible from Samoa Beach and surrounding dunes by the recreating public.

The Project would remove the smokestack and abandoned boiler building, improving the visual condition of the Project Site and scenic view from the greater Humboldt Bay area (see Appendix A). Existing demolition waste and other industrial blight would also be removed from the Project Site.

The maximum height of the new facility would be approximately 60 feet. There would be fleeting views of the buildings visible between the dunes via New Navy Base Road. Façade colors and patterns have been chosen to integrate the buildings into the setting. Tree removal would not occur.

The Project would include implementation of mitigation for rare plants and dune mat habitat (see Section 4.4 – Biological Resources). Any change in visual appearance resulting from removal of non-native plant species, revegetation, mulching, or related activities would be short-term in duration. While native plant composition would improve, the visual appearance of the Project Site would remain unchanged from a distance. Changes to dune elevation or long-term visual appearance would not occur. Any short-term visual changes related to dune mitigation and restoration would result in a less than significant impact. Dune mitigation areas would appear visually unchanged from a distance and mitigation activities would be similar to general landscaping activities. Additionally, work would occur via hand labor, not heavy equipment, and would not include changes in topography. Once established, mitigation areas would result in a visual improvement by reducing non-native species and removing trash and debris.

Given the Project will remove highly visible industrial blight and construct a new facility designed to visually integrate into surrounding scenic resources absent negative visual effects on the Coastal Scenic Area west of New Navy Base Road, any potential impact would be less than significant.

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

The Project is not located on, near, or within view of a state scenic highway. Although no highways in Humboldt County are “officially designated” as California State Scenic highways, several State Highways are eligible for official designation: Route 36 from Route 101 near Fortuna to the Trinity County line; Route 96 from Route 299 at Willow Creek north to Siskiyou County; Route 101 for its entire length in Humboldt County; and Route 299 from Arcata to Willow Creek. This Project is not readily visible from any of these locations. No impact would result.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public view of the site and its surroundings? (Public Views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality? (Less-than Significant)

The Project would be consistent with applicable policies in Section 3.40 – Visual Resource Protection of the Humboldt Bay Area Plan. Any construction-related visual changes would be temporary and would not affect the visual character of the vicinity, which is an active industrial area. The facility would be principally permitted and consistent with the visual character of the surrounding area. The Phase 1 Grow-Out Module and Phase 1 CUP/Phase

2 Grow-Out Module buildings (see Project Description Figure 2 – Proposed Site Layout) would be larger in width and length than the existing industrial buildings on the parcel. The combined footprints of the five proposed buildings would be larger than the existing footprint of the combined industrial structures within the Project boundary.

The existing boiler building is twelve stories high with ten internal floors. The height of the smokestack is 270 feet. The maximum height of the facility (approximately 60 feet) would be far less than the existing boiler building and smokestack and consistent with building heights allowable by the Humboldt County Code (75 feet) and presently in use on nearby commercial and industrial properties in Samoa and Fairhaven, California. Exterior facility design would be compatible with the visual character of the surrounding dune environment and would not impact public views (e.g. views of the facility from Humboldt Bay or Samoa Beach). Removal of the smokestack and boiler building, which are highly visible remnants of industrial blight, will improve public views of the facility.

While not a visual simulation for the purposes of CEQA (general public views of the Project Site do not occur from above), existing conditions and post-construction drones views have been prepared for the Project to provide a proximal layout and general pre- and post-Project appearance of the overall Project Site (Image 4-1 and Image 4-2).

Image 4-1 Existing Conditions Drone View of the Project Site, Looking North

Image 4-2 Post-Project Conditions Drone View of the Project Site, Looking North (not a simulation for the purposes of CEQA)

Visual simulations were prepared from various public view points, including the Eureka Waterfront at the foot of F Street and the Wharfinger Building and Public Marina, the Samoa Dunes along New Navy Base Road, and the Humboldt Bay shoreline along the Waterfront Trail between the foot of Truesdale Street and Del Norte Street in Eureka. Please see Appendix A – Visual Simulations for the complete set of visual simulations prepared for the Project.

The Wharfinger Building and Public Marina are located approximately 0.6 miles east of the Project Site on the opposite bank of the Samoa Channel in Eureka. Existing public views from the Wharfinger Building and Public Marina looking west include the smokestack, boiler building, water tank, and other tall structures that would be demolished as part of the proposed Project. See Image 4-3 for existing public views of the Project Site from the Wharfinger Building and Public Marina. Following construction, new buildings would be of similar height to other industrial facilities on and near the Project Site, reducing the visual impact on the overall western skyline as visible from the Eureka Waterfront. See Image 4-4 for a post-Project visual simulation of public views from the Wharfinger Building and Public Marina. Views from other locations along the waterfront (see Appendix A) showed similar results. Based on the results of the visual simulation, public views from the Eureka Waterfront would not be detrimentally altered.

New Navy Base Road is located approximately 0.15 miles east of the Project Site along the Samoa Dunes corridor. Public views exist from the dunes and beach. Fleeting views of the Project Site between the dunes are possible from vehicles traveling along New Navy Base Road. Existing public views from New Navy Base Road, Samoa Dunes, and the beach looking east include the smokestack, boiler building, water tank, and other tall structures

that would be demolished as part of the proposed Project. See Image 4-5 for existing public views of the Project Site from the New Navy Base Road. Following construction, new buildings would be of similar height to other industrial facilities on and near the Project Site, reducing the visual impact on the overall visual character or public views as visible from New Navy Base Road. See Image 4-6 for a post-Project visual simulation of public views from New Navy Base Road.

The new buildings would be visible from various vantage points in the vicinity, as shown in Image 4-3 through Image 4-6. However, the parcel is an industrially zoned area and views from nearby scenic areas would not be significantly affected. The parcel is an industrial area where larger buildings are anticipated. The proposed facility is not out of character with anticipated uses or style of development. As such and based on the results of the visual simulation, public views from this location would also not be detrimentally altered, and any potential impact would be less than significant. For additional drone simulations and ground-borne visual simulations, see Appendix A.

Image 4-3 Existing Public Views of the Project Site, Looking West from the City of Eureka, Wharfinger Building, and Public Marina

Image 4-4 Post-Project Simulation of the Project Site, Looking West from the City of Eureka, Wharfinger Building, and Public Marina

Image 4-5 Existing Public Views of the Project Site, Looking East from New Navy Base Road

Image 4-6 Post-Project Simulation of the Project Site, Looking East from New Navy Base Road

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

Exterior lighting would be consistent with lighting guidelines in the Humboldt County General Plan. Exterior lighting is present on buildings and in parking areas under existing conditions. There are also presently lights on top of the tallest building and smokestack for airplane safety. The adjacent industrial property operated by Green Diamond includes substantial exterior lighting that is on all night long to accommodate night-shift operations.

Following construction, exterior lighting would remain on each night, as the facility would be staffed on a 24-hour basis. Exterior night-lighting would generally be located on the interior of the campus to illuminate doorway and internal pathways. Exterior lighting would be downcast, shielded, and directed to avoid light trespass and scatter. Exterior lighting would be compatible with the existing setting. As a result of the facility's exterior lighting design, any new exterior lighting will not result in a new source of light or glare that would adversely affect views. The County, as a standard condition of approval, requires that all light be shielded and directed down at the ground so as to preclude illumination of the night sky or light spillover onto adjacent properties. Any potential impact would be less than significant.

4.2 Agriculture and Forest Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				✓
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				✓
d) Result in the loss of forest land or conversion of forest land to non-forest use?				✓
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use?				✓

Impact Analysis

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? (No Impact)

The Project is located on a parcel zoned for coastal dependent industrial uses and does not include lands suitable for farmland. The Humboldt County WebGIS portal indicates the property is not designated as Prime Farmland or Farmland of Statewide Importance and does not include Prime Agricultural Soils (Humboldt County 2020). Thus, no impact would result.

b) Conflict with Agricultural Zoning or Williamson Act Contract? (No Impact)

The Project is not located on property enrolled in a Williamson Act contract (Humboldt County 2020). No impact would result.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)) (No Impact)

The Project is located on property zoned for coastal industrial use. The Project is not located on property zoned for forest or timberland. Trees or other forestland resources would not be removed as a result of the Project. No impact would result.

d) Result in the loss of forest land or conversion of forest land to non-forest use? (No Impact)

The Project would not result in the removal of trees, loss of forest land, or conversion of forest land to other uses. Trees or other forest uses would not be removed as a result of constructing the facility. No impact would result.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use? (No Impact)

The Project would not impact any lands zoned or used for agricultural or forest uses. A land use conversion away from agricultural or forest uses would not occur, and no impact would result.

4.3 Air Quality

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporation	Less-than-Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the Project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?		✓		
b) Result in a cumulatively considerable net increase in any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?		✓		
c) Expose sensitive receptors to substantial pollutant concentrations?		✓		
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?		✓		

Impact Analysis

The following federal, state, and local regulations were the basis for determining the impacts to Air Quality.

Clean Air Act

Under the Federal Clean Air Act, the U.S. Environmental Protection Agency (EPA) is responsible for establishing the National Ambient Air Quality Standards (NAAQS) for the following six 'criteria' air pollutants: ozone, particulate matter (PM_{10} and $PM_{2.5}$), nitrogen dioxide, carbon monoxide, lead, and sulfur dioxide.

California Clean Air Act

In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California Clean Air Act. The California Clean Air Act is administered by the California Air Resources Board (CARB). The CARB is responsible for meeting the state requirements of the federal CAA, administering the California Clean Air Act, and establishing the California Ambient Air Quality Standards (CAAQS) which include the six NAAQS criteria pollutants listed above as well as visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The CARB regulates mobile air pollution sources, such as motor vehicles.

North Coast Unified Air Quality Management District

The North Coast Unified Air Quality Management District (NCUAQMD) has jurisdiction over Humboldt, Del Norte, and Trinity counties. The NCUAQMD's primary responsibility is for controlling air pollution from stationary sources. Additionally, the NCUAQMD has permit authority over most types of stationary emission sources and can require stationary sources to obtain permits, impose emission limits, set fuel or material specifications, or establish operational limits to reduce air emissions. The NCUAQMD monitors air quality, enforces local, state, and federal air quality regulations for counties within its jurisdiction, inventories and assesses the health risks of toxic air contaminants (TACs), and adopts rules that limit pollution. The NCUAQMD is listed as in "attainment" or "unclassified" for all the federal standards, also known as the National Ambient Air Quality Standards. The NCUAQMD is listed as "attainment" or "unclassified" for all the state standards, also known as the California Ambient Air Quality Standards, except for the state 24-hour particulate (PM_{10}) standard, in Humboldt County only.

To address non-attainment for the state PM_{10} standard, the NCUAQMD adopted a Particulate Matter Attainment Plan in 1995. This plan presents available information about the nature and causes of PM_{10} standard exceedances and identifies cost-effective control measures to reduce PM_{10} emissions to levels necessary to meet the CAAQS. Compliance with applicable NCUAQMD PM_{10} rules is applied as the threshold of significance for the purposes of this analysis, which includes NCUAQMD Rule 104 Section D, Fugitive Dust Emissions. Pursuant to Rule 104 Section D, the handling, transporting, or open storage of materials in such a manner, which allows or may allow unnecessary amounts of particulate matter to become airborne, shall not be permitted. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including, but not limited to, covering open bodied trucks when used for transporting materials likely to give rise to airborne dust and the use of water during the grading of roads or the clearing of land.

Additionally, the NCUAQMD requires notification for all construction within their geographic jurisdiction, and submission of an application, dust control plan, and filing fee, consistent with Naturally Occurring Asbestos (NOA) regulations. Dust control plans must, at a minimum, require that:

- Visible emissions from equipment and operations shall not cross the property line;
- Crushers shall not discharge emissions for a 3-minute period in any hour that are greater than 15% opacity;
- Grinding mills, screens, and transfer points on conveyors shall not discharge emissions for a 3-minute period in any one hour that are equal to or greater than 10% opacity.
- Use the NCUAQMD's "NOA Dust Mitigation Form" to file the Dust Control Plan

For projects that are exempt from the NOA regulations, the NCUAQMD's Dust Mitigation Form may be used informally as Best Management Practices (BMPs).

Existing Air Quality – Criteria Air Pollutants

California and the federal government (i.e., the EPA) have established ambient air quality standards for several different pollutants. Of pollutants that may be generated by the proposed Project, those of greatest concern are emitted by motor vehicles. These pollutants include fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) and particulate matter less than 10 microns in diameter (PM_{10}). Other pollutants that are less problematic

to the region include ozone precursors (nitrogen oxides [NOX] and reactive organic gases [ROG]) and carbon monoxide.

a) Conflict with or obstruct implementation of the applicable air quality plan? (Less-than-Significant with Mitigation)

This impact relates to consistency with an adopted attainment plan. Within the Project vicinity, the NCUAQMD is responsible for monitoring and enforcing local, state, and federal air quality standards.

As noted above, Humboldt County is designated "attainment'' for all National Ambient Air Quality Standards. With regard to the California Ambient Air Quality Standards, Humboldt County is designated as "attainment" for all pollutants except PM_{10}. Humboldt County is designated as "non-attainment" for the state's PM_{10} standard.

PM_{10} refers to inhalable particulate matter with an aerodynamic diameter of less than 10 microns. PM_{10} includes emission of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. PM_{10} sources include unpaved road dust, smoke from wood stoves, construction dust, open burning of vegetation, and airborne salts and other particulate matter naturally generated by ocean surf. The proposed Project will create PM_{10} emissions in part through vehicles coming to and leaving from the Project Site and associated construction activity, including the demolition of existing pulp mill infrastructure.

Pursuant to the NCUAQMD's Rule 104 Section D, the handling, transporting, or open storage of materials in such a manner, which allows or may allow unnecessary amounts of particulate matter to become airborne, shall not be permitted. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including, but not limited to, covering open bodied trucks when used for transporting materials likely to give rise to airborne dust and the use of water during the grading of roads or the clearing of land. During earthmoving activities, fugitive dust (PM_{10}) would be generated. The amount of dust generated at any given time would be highly variable and is dependent on the size of the area disturbed at any given time, amount of activity, soil conditions, and meteorological conditions. Unless controlled, fugitive dust emissions during construction of the Project could be a significant impact, therefore, Mitigation Measure AIR-1 will be incorporated to comply with NCUAQMD's Rule 104 Section D and include relevant BMPs from NCUAQMD's Asbestos Dust Mitigation Plan.

Mitigation

Implementation of Mitigation Measure AIR-1 would reduce the potential impact related to PM_{10} fugitive dust by requiring BMPs.

Mitigation Measure AIR-1: Best Management Practices to Reduce Air Pollution

The contractor shall implement the following BMPs during construction; the BMPs shall be included as notes on final construction plans:

- Equipment and activity must not emit dust that is visible crossing the property line.
- All exposed surfaces (e.g., parking areas, staging areas, soil piles, active graded areas, excavations, and unpaved access roads) shall be watered two

times per day in areas of active construction or as necessary. The County or NCUAQMD may require additional treatment in periods of high wind or other circumstances causing visible dust to be generated by the construction site.

- All haul trucks transporting soil, sand, or other loose material off-site shall be adequately wetted and covered.
- Use of mud rumbler mats will be required to reduce off-site tracking of mud and dirt. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day, as necessary. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph, unless the unpaved road surface has been treated for dust suppression with water, rock, wood chip mulch, or other dust prevention measures.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes. Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications.
- Materials screening, transfer points on a belt conveyor, and crushers must have dust control measures such that:
    - No screening operation, or transfer point on a belt conveyor discharges into the air any visible emissions other than uncombined water vapor, for a period aggregating more than three minutes in any one hour which are 50% as dark or darker in shade as that designated as number one on the Ringelmann Chart, or 10% opacity.
    - No crusher discharges into the air any visible emissions other than uncombined water vapor, for a period aggregating more than three minutes in any one hour which are 75% as dark or darker in shade as that designated as number one on the Ringelmann Chart, or 15% opacity.
    - Control measures may include installation and operation of spray bars on all conveyors; installation of shrouds at all drop points; or any other measure(s) deemed as effective as the prior listed measures.
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The NCUAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

With implementation of Mitigation Measure AIR-1, the Project will not conflict with applicable air plans. The potential impacts would be reduced to a less-than-significant level with mitigation.

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

The Project's potential to generate criteria pollutants of concern during construction and operation is assessed in this section. Potential impacts of concern will be exceedances of state or federal standards for PM_{10}. Localized PM_{10} is of concern during construction because of the potential to emit fugitive dust during earth-disturbing activities.

Construction

Localized PM10

The Project will include clearing and grubbing, demolition, excavation, grading, asphalt paving, and building construction. Generally, the most substantial air pollutant emissions will be dust generated from site clearing and grubbing, grading, and excavation. If uncontrolled, these emissions could lead to both health and nuisance impacts. Construction activities would also temporarily generate emissions of equipment exhaust and other air contaminants. The Project's potential impacts from equipment exhaust are assessed separately below.

The NCUAQMD does not have formally adopted thresholds of significance for fugitive, dust-related particulate matter emissions above and beyond Rule 104, Section D, which does not provide quantitative standards. For the purposes of analysis, this document uses the Bay Area Air Quality Management District (BAAQMD) approach to determining significance for fugitive dust emissions from Project construction. The BAAQMD bases the determination of significance for fugitive dust on a consideration of the control measures to be implemented. If all appropriate emissions control measures recommended by BAAQMD are implemented for a project, then fugitive dust emissions during construction are not considered significant. BAAQMD recommends a specific set of "Basic Construction Measures" to reduce emissions of construction-generated PM_{10} to less than significant. Without incorporation of these Basic Construction Measures, the Project's construction-generated fugitive PM_{10} (dust) would result in a potentially significant impact.

The Basic Construction Measure controls recommended by the BAAQMD are incorporated into Mitigation Measure AIR-1. These controls are consistent with NCUAQMD Rule 104 (D), Fugitive Dust Emission, and provide supplemental, additional control of fugitive dust emissions beyond that which would occur with Rule 104 (D) compliance alone. Therefore, with incorporation of Mitigation Measure AIR-1, the Project would result in a less than significant impact for construction-period PM_{10} generation and would not violate or substantially contribute to an existing or projected air quality violation.

Construction Criteria Pollutants

The NCUAQMD does not have established CEQA significance criteria to determine the significance of impacts that may result from a project; however, the NCUAQMD does have criteria pollutant significance thresholds for new or modified stationary source projects proposed within the NCUAQMD's jurisdiction. NCUAQMD has indicated that it is appropriate for lead agencies to compare proposed construction emissions that last more than one year to its stationary source significance thresholds (Davis 2019), which are:

- Nitrogen oxides – 40 tons per year,
- Reactive organic gases – 40 tons per year,

- PM10 – 15 tons per year, and
- Carbon monoxide – 100 tons per year.

If an individual project's emission of a particular criteria pollutant is within the thresholds outlined above, the project's effects concerning that pollutant are considered to be less than significant.

The California Emissions Estimator Model (CalEEMod) version 2016.3.2 was used to estimate air pollutant emissions from Project construction (Appendix B of this IS/MND). Construction of the Project is expected to begin in 2021 and be complete by the end of 2026. Construction activities include demolition, site preparation, grading, building construction, and paving. The detailed equipment activity and materials hauling assumptions are provided with Appendix B.

Table 4-1 Construction Regional Pollutant Emissions summarizes construction-related emissions. As shown in the table, the Project's construction emissions would not exceed the NCUAQMD's stationary sources emission thresholds in any year of construction. Therefore, the Project's construction emissions are considered to have a less-than-significant impact.

Table 4-1 Construction Regional Pollutant Emissions

Parameter (year)	Emissions (tons)			
	ROX	NOX	CO	PM_{10}
Construction (2021)	0.9	7.7	6.6	0.5
Construction (2022)	3.2	22.1	28.1	2.5
Construction (2023)	2.3	13.6	21.1	2.1
Construction (2024)	1.3	8.2	12.8	1.1
Construction (2025)	1.5	8.4	13.3	1.4
Construction (2026)	0.2	1.5	2.2	0.2
NCUAQMD Stationary Source Thresholds	40	40	100	15

Operation

Following construction, operation of the Project would include of backup generators, stationary sources of air emissions. Although sustained use of the generators is not anticipated, it is possible that the generators would be used during a power outage. As such, it is assumed that the generators would be used up to 500 hours in any one year as a result of power outages.

The Project would also result in operational trips (employee, short-hauling, and long-hauling), as well as energy consumption. Project operational emissions, including emergency back-up generator use, were estimated using CalEEMod version 2016.3.2. Emissions were modeled for year 2026. Operational on-road mobile emissions were estimated for hauling activity within the NCUAQMD's jurisdiction (North Coast Air Basin). Mobile emissions that would be emitted within the North Coast Air Basin are shown in Table 4-2. As shown in the table, the Project's operational emissions are below the NCUAQMD's stationary sources emission thresholds. Therefore, the Project's operational emissions are considered to have a less-than-significant impact.

Table 4-2 Operational Regional Pollutant Emissions Within NCUAQMD (2026)

Parameter (2026)	Emissions (tons)			
	ROG	NOX	CO	PM10
Area	2.94	0.00	0.01	0.00
Energy Use	0.01	0.10	0.08	0.01
Off Road/Stationary	0.02	0.21	0.30	0.01
Employee	0.10	0.26	2.04	0.40
Hauling	0.09	3.16	0.64	0.28
Total 2026 Operations	3.17	3.73	3.07	0.70
NCUAQMD Stationary Source Thresholds	40	40	100	15

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

Sensitive receptors include school-aged children (schools, daycare, playgrounds), the elderly (retirement community, nursing homes), the infirm (medical facilities/offices), and

those who exercise outdoors regularly (public and private exercise facilities, parks). The nearest residence to the Project Site is approximately 1,600 feet (0.3 mile) from the Project boundary.

BAAQMD's Basic Construction Measures included in Mitigation Measure AIR-1 (BMPs to Reduce Air Pollution) minimize idling times for trucks and equipment to five minutes (as required by the California Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, included in Title 13, Section 2485 of California Code of Regulations [CCR]) and ensures construction equipment is maintained in accordance with manufacturer's specifications.

Project construction activities would occur for multiple years, starting in 2021 and ending in 2026. Although the Project is expected to include prolonged construction equipment use, the nearest potential receptor is more than 0.25 mile from the Project boundary. Due to distance to the nearest potential receptor and the implementation of Mitigation Measure AIR-1 2, which would control fugitive dust, the Project would not result in the exposure of sensitive receptors to substantial pollutant concentrations. Therefore, with implementation of Mitigation Measure AIR-1, the construction-related impact would be less than significant with mitigation.

Following construction, the Project would include stationary sources of air emissions that could result in long-term operational emissions of criteria air pollutants. Monthly apparatus checks of emergency back-up generators is assumed to require a maximum of 10 hours of use. It is estimated that a maximum of 500 hours may be required during a regional power outage. However, power outages are uncommon in the area and use during outages would not result in substantial long-term emissions. Additionally, the backup generators would require a permit from the NCUAQMD. As part of the permitting process, the NCUAQMD would verify the generators are either EPA- or CARB-certified or achieves emission standards for emergency standby diesel generators in other ways, prior to authorizing installation. Given the generators would only be utilized during potential power outages or emergencies, and the NCUAQMD would establish operation and monitoring protocols for these uses, emissions from generator usage is a small component of the project and will not contribute significantly to the overall operation emissions. Due to the limited use of such equipment and compliance with regulatory requirements and the distance to the nearest sensitive receptor, Project operation would not expose nearby sensitive receptors to substantial levels of pollutants. The operation-related impact would be less than significant.

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

The Project would create limited exhaust fumes from gas- and diesel-powered equipment during construction. The likelihood of these odors and emissions reaching nearby receptors is influenced by atmospheric conditions (wind) and distance. Due to the distance to the nearest potential receptor and unstable atmospheric conditions (frequent wind), the Project emissions or odors caused by construction would not adversely affect a substantial amount of people.

Project demolition could result in exposure of construction workers to Asbestos Containing Material (ACM) that may be present in the existing facilities. During demolition and construction asbestos abatement would be conducted, as necessary, throughout the pulp mill site to remove existing ACM from existing Project Site structures prior to building

demolition. Appropriate notifications would be made to the NCUAQMD in accordance with the National Emissions Standards for Hazardous Air Pollutants (NESHAP) requirements prior to the commencement of asbestos abatement and/or demolition work at the Projects Site. A licensed abatement contractor would be engaged by NAFC, or the General Contractor, to conduct abatement work in accordance with specifications. Building and structure demolition would commence once asbestos abatement work is complete, as applicable to each structure. Therefore, implementation of regulatory requirements would ensure that potential impacts from exposure to ACM during demolition would be less than significant. However, Mitigation Measure AIR-2 is applied herein to enhance compliance with the regulatory requirements.

Following construction, operations will not result in any major sources of odor or emissions, except for the infrequent use of backup generators for monthly checks, or during electrical power outages, should it be needed. Therefore, a less than significant impact would result.

Mitigation

Mitigation Measure AIR-2: Best Management Practices to Reduce Asbestos Emissions During Demolition

The contractor shall implement the following BMPs during abatement and demolition; the BMPs shall be included as notes on final demolition plans:

- Work impacting material containing less than 1% asbestos (unclassified work) shall be performed in accordance with Class II asbestos work protocols as outlined in in 8 CCR 1529.
- All interior asbestos abatement work impacting asbestos, including Class II and unclassified work, shall be performed within sealed negative-pressure containments.
- Negative-pressure containments established at the interior of a structure shall be constructed and vented to the exterior in accordance with 8 CCR 1529.additional suspect asbestos material is discovered during site work, then work in that area shall stop, the material wetted, and access to the area restricted until an appropriate asbestos characterization can be made.

Implementation of Mitigation Measure AIR-2 would reduce the potential impact related to exposure of workers to ACM during demolition by establishing protocols for asbestos abatement, which could result in a significant impact to air quality if not adhered to. Therefore, the impacts would be less than significant with mitigation.

4.4 Biological Resources

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

Impact Analysis

The Project Site is a developed industrial area, characterized by hardscape and areas of historic grading/filling. Most of the site has limited wildlife habitat.

A Marine Resources Biological Evaluation (Appendix D, GHD and H. T. Harvey, 2021) was prepared to address the effects of the Project discharge water from the existing RMT II ocean outfall pipe and multiport diffuser on marine (Pacific Ocean) species which are: 1) listed as endangered or threatened under the federal Endangered Species Act (and their designated critical habitat), 2) protected under the Marine Mammal Protection Act, 3) a California state special status species, or 4) commercially valuable. A Numeric Modeling Report (Dilution Study) was also prepared for the Project (Appendix E, GHD 2021b). The Project Study Boundary (PSB) included the offshore area affected by effluent discharge from the RMT II outfall pipe and diffuser, approximately 500 meters away from the multiport diffusers at the outfall. The Numeric Modeling Report modeled the effluent discharge from the Project with respect to applicable water quality regulations and was considered in the Marine Resources Biological Evaluation when evaluating potential effects of water quality on marine species.

Impact analysis in this section, which also considers potential impacts to Humboldt Bay, located proximal to the Project Site, and the Pacific Ocean, as it relates to the Project's effluent discharge, demolition and construction activities, is based on the following technical documents:

- Terrestrial Biological Resources Report (GHD 2021a, Appendix C)
- Bat Habitat Assessment (WRA 2021, Appendix C-1)
- Marine Resources Biological Evaluation Report (GHD and H.T. Harvey 2021, Appendix D)
- Numeric Modeling Report (GHD 2021b, Appendix E)
- Botanical, Wetland, and Sensitive Natural Communities Technical Memorandum (GHD 2021c, Appendix F)
- Construction Noise, Vibration, and Hydroacoustic Assessment (Illingworth & Rodkin 2020, Appendix J)
- Supplemental Soils and Anthropogenic Disturbance Investigation of Potential ESHA (GHD 2021g, Appendix L)

The applicant's preferred species is Atlantic Salmon. However, this is subject to approval by the California Department of Fish and Wildlife (CDFW). The biological impact analysis is not affected by final species selection. As discussed in the Section 2.3.8 of the Project Description (Appendix M), the facility includes a series of physical barriers to eliminate risk of fish escape, including a sub-micron filtration stage before discharge of process water. All transport of fish within the facility occurs via a contained piping system to prevent fish escape. Each system is equipped with jump screens to prevent the fish from being able to jump out of the tank and will also work to contain them in the case of sloshing during an earthquake. The floor drains are fitted with grates specifically designed to prevent fish passage. Secondary grates sized to prevent fish passage are installed in the drain collection wells. All water captured by floor drains is sent to the waste water treatment plant for the same treatment as production water.

In addition, water quality impact analysis in the Numeric Modeling Report (GHD 2021b, Appendix E) assumed the maximum potential volume of needed fish food, which varies by species, to conservatively assess a worst-case effluent condition.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? (Less-than-Significant with Mitigation)

Sensitive and special status species known to occur or potentially occur within the Project Site or Project Study Boundary (PSB) are identified in the table below. Species which are likely to be impacted as a result of the Project and require specific mitigation measures to lessen these impacts are further summarized below. Those species which have been identified as having a less than significant impact, or no impact, with the exception of coastal willow thickets, are analyzed further in the associated technical studies (Appendix A-L).

Table 4-3 Sensitive and Special Status Species

Scientific Name	Common Name	Status	Potential to Occur	Potential Impact
Plants and Plant Communities				
**Gilia millefoliata*	Dark-eyed gilia	G2, S2	**High Potential/Occurring**	Less than significant with MM BIO-1
**Abronia latifolia-Ambrosia chamissonis Alliance*	Dune mat	G3, S3	**High Potential/Occurring**	Less than significant with MM BIO-6
**Salix hookeriana Alliance*	Coastal willow thickets	G4, S3	**High Potential/Occurring**	No impact
**Rubus ursinus Alliance*	Coastal brambles	G4, S3	**High Potential/Occurring**	Less than significant with MM BIO-6
Terrestrial Mammals				
**Erethizon dorsatum*	North American Porcupine	G5, S3	**Moderate Potential**	Less than significant with MM BIO-2
Bats				
Corynorhinus townsendii	Townsend's Big-eared Bat	G3G4, S2, CDFW_SSC Species of Special Concern | IUCN_LC-Least Concern | WBWG_H-High Priority	**Moderate Potential**	Less than significant with MM BIO-2
Antrozous pallidus	Pallid Bat	CDFW_SSC-Species of Special Concern	**Moderate Potential**	Less than significant with MM BIO-2
Amphibians				
**Rana aurora*	Northern Red-legged Frog	G4, S3, CDFW_SSC-Species of Special Concern	**Moderate Potential**	Less than significant with MM BIO-2
Birds				
Brachyramphus marmoratus	Marbled Murrelet	FT, SE, G3G4, CDF_S-Sensitive	**High Potential**	Less than significant
**Accipiter striatus*	Sharp-shinned Hawk	G5, S4, CDFW_WL-Watch List | IUCN_LC-Least Concern	**Present**	Less than significant with MM BIO-5
**Ardea alba*	Great Egret	G5, S4, IUCN_LC-Least Concern	**Moderate Potential**	Less than significant with MM BIO-5
**Ardea herodias*	Great Blue Heron	G5, S4, IUCN_LC-Least Concern	**Moderate Potential**	Less than significant with MM BIO-5
Branta bernicla nigricans	Black Brant	G5, S2, CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	**Moderate Potential**	Less than significant
**Chaetura vauxi*	Vaux's Swift	G5, S2S3, CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	**Moderate Potential**	Less than significant with MM BIO-5
**Circus hudsonius*	Northern Harrier	G5, S3, CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	**High Potential**	Less than significant with MM BIO-5

Scientific Name	Common Name	Status	Potential to Occur	Potential Impact
Egretta thula	Snowy Egret	G5, S4, IUCN_LC-Least Concern	**Moderate Potential**	Less than significant
**Elanus leucurus*	White-tailed Kite	G5, S3S4, CDFW_FP-Fully Protected | IUCN_LC-Least Concern	**Moderate Potential**	Less than significant with MM BIO-5
Haliaeetus leucocephalus	Bald Eagle	FD, SE, G5, S3, CDFW_FP-Fully Protected | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	**Moderate Potential**	Less than significant
Hydroprogne caspia	Caspian Tern	G5, S4, IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	**Moderate Potential**	Less than significant
Numenius americanus	Long-billed Curlew	G5, S2, CDFW_WL-Watch List | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	**Moderate Potential**	Less than significant
**Nycticorax nycticorax*	Black-crowned Night-heron	G5, S4, IUCN_LC-Least Concern	**Moderate Potential**	Less than significant with MM BIO-5
**Pandion haliaetus*	Osprey	G5, S4, CDFW_WL-Watch List | IUCN_LC-Least Concern	**Present**	Less than significant with MM BIO-5
**Phalacrocorax auritus*	Double-crested Cormorant	G5, S4, CDFW_WL-Watch List | IUCN_LC-Least Concern	**Moderate Potential**	Less than significant with MM BIO-5
Pelecanus occidentalis californicus	California Brown Pelican	FD, SD, G4T3T4, S3, CDFW_FP-Fully Protected	**Moderate Potential**	Less than significant
Riparia riparia	Bank Swallow	ST, G5, S2, IUCN_LC-Least Concern	**Moderate Potential**	Less than significant
Marine Mammals				
Eschrichtius robustus	Gray Whale	G4, N4, MMPA	**High Potential**	Less than significant
Eumetopias jubatus	Steller Sea Lions	G3, S2, MMPA	**High Potential**	Less than significant
Phoca vitulina richardii	Pacific Harbor Seal	G5T5Q, N5, MMPA	**High Potential**	Less than significant
Phocoena phocoena	Harbor Porpoise	G4G5, N4N5, MMPA	**High Potential**	Less than significant
Zalophus californianus	California Sea Lion	G4, N4, MMPA	**High Potential**	Less than significant
Fish				
Acipenser medirostris	North American Green Sturgeon, Southern Distinct Population segment (DPS)	FT, G3, S1S2, AFS_VU-Vulnerable | CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened | NMFS_SC-Species of Concern	**High Potential**	Less than significant
Entosphenus tridentatus	Pacific Lamprey	G4, S4, AFS_VU-Vulnerable | BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	**Moderate Potential**	Less than significant
Oncorhynchus kisutch	Coho Salmon - southern Oregon / northern California	FT, ST, G4T2Q, S2, AFS_TH-Threatened	**High Potential**	Less than significant

Scientific Name	Common Name	Status	Potential to Occur	Potential Impact
	Evolutionarily Significant Unit (ESU)			
Oncorhynchus mykiss irideus pop. 16	Steelhead - northern California DPS	FT, G5T2T3Q, S2S3, AFS_TH-Threatened	**High Potential**	Less than significant
Oncorhynchus tshawytscha	Chinook Salmon - California Coastal ESU	FT, G5, S1, AFS_TH-Threatened	**High Potential**	Less than significant

Footnotes:
*Requires Mitigation and discussed further below in this Section.
Potential to Occur Descriptions:
No Potential. Habitat on and adjacent to the Project Area is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime);
Low Potential. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the Project Area is unsuitable or of very poor quality. The species is not likely to be found in the Project Area;
Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the Project Area is unsuitable. The species has a moderate probability of being found in the Project Area;
High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the Project Area is highly suitable. The species has a high probability of being found in the Project Area.;
Present/Not Present. Detected or excluded (habitats only) during site visits.

Status:
FedList: Listing status under the federal Endangered Species Act (ESA) – E (endangered); T (threatened); C (candidate); P (proposed); UR (under review); D (delisted)
CalList: Listing status under the California state Endangered Species Act (CESA) - E (endangered); T (threatened); C (candidate)
GRank: Global Rank from NatureServe's Heritage Methodology (ranking according to degree of global imperilment - G1 = Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors; G2 = Imperiled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors; G3 = Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors; G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors; G5 = Secure—Common; widespread and abundant; Q = " Questionable taxonomy that may reduce conservation priority
SRank: State Rank from NatureServe's Heritage Methodology (ranking according to degree of imperilment in the state (California) - S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state; S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state; S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state; S4 = Apparently Secure—Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors; S5 = Secure—Common, widespread, and abundant in the state; SNR = State Not Ranked
BLM_S (Bureau of Land Management Sensitive); **CDF_S**: (California Department of Forestry and Fire Protection Sensitive); **CDFW_FP** (CDFW Fully Protected Animal); **CDFW_SSC** (CDFW Species of Special Concern); **IUCN_NT** (International Union for Conservation of Nature Near Threatened); **USFS_S** (U.S. Forest Service Sensitive)

Special Status Plant Species

Seasonally-appropriate surveys for special status plants occurred in April, May, and June 2020; detailed methods and results are available in Appendix F (GHD 2021c). One special status plant, dark-eyed gilia (*Gilia millefoliata)*, was detected on the Project Site and has the potential to be impacted by the Project.

Dark-Eyed Gilia (Gilia millefoliata)
California Native Plant Society (CNPS)-Listed Rare Plant (1B.2), Present

Dark-eyed gilia is protected as a CNPS-listed 1B.2 rare plant. An estimated population of approximately 100,000 dark-eyed gilia plants occurs within the study area. Dark-eyed gilia had a clustered distribution scattered from the area west of the clarifiers across the southern end of the property and extending south beyond the edge of the study area. The highest density of the rare plants occurred north of the fence along the disturbed access road and in a couple of small patches near the clarifiers. The on-site habitat value of established gilia is considered lower value habitat because they have been fragmented, invaded, and anthropogenically disturbed over the last 50 plus years (GHD 2021g). Approximately 0.87 acres of dark-eyed gilia and/or dark-eyed gilia habitat would be significantly impacted during construction and operation of the Project (Appendix F) out of 2.4 acres that exist within the PSB. To reduce the impact to a less-than-significant level, Mitigation Measure BIO-1 would require compensatory mitigation for loss of dark-eyed gilia habitat at a ratio of no less than 3:1 (2.61-acre mitigation area: 0.87-acre permanent impact area). Compensatory mitigation would occur on properties managed by the Humboldt Bay Harbor District (HBHD), Friends of the Dunes (FOD), the U.S. Fish and Wildlife Service (USFWS), and the Manila Community Services District (MCSD), where natural dune ecosystems are established and where gilia would be better protected by restoring contiguous dune habitat with intact dune systems and long-term protection within natural resource conservation areas off-site.

Mitigation

Mitigation Measure BIO-1: Implementation of Compensatory Mitigation for Loss of Dark-eyed Gilia

Loss of dark-eyed gilia habitat shall be mitigated through compensatory mitigation at a ratio of no less than 3:1 (area) through the implementation of a Restoration and Monitoring Plan (RMP), subject to review and approval of the Planning and Building Department after consultation with the California Department of Fish and Wildlife (CDFW). Both on-site and off-site methods, success criteria, monitoring requirements, and reporting requirements for mitigation shall be conducted as followed:

- Pre-construction (non-native removal) surveys for rare plants, including dark-eyed gilia, shall occur at both on-site and off-site mitigation areas identified in the RMP.
- Sensitive dark-eyed gilia habitats will be marked with flagging and signage prior to replanting designated on-site restoration areas to avoid disturbing the rare plant population.
- The established dark-eyed gilia population to be preserved on-site and translocation macroplots shall be searched for dark-eyed gilia during the

blooming period. Macroplots measuring approximately 100 square meters (m^2) are to be established at the time of translocation in the best available habitat at each of the off-site properties (USFWS, FOD, MCSD, and HBHD), and these will be marked by GPS in the field.

- Successful mitigation of impacts to dark-eyed gilia is defined by protecting the remaining rare plant habitat along the southern boundary and translocating the population from the project footprint to suitable restored off-site habitat.
- Annual success is defined by the presence of dark-eyed gilia with no minimum count, but population counts inform whether supplementation with additional seed collection may be needed to maintain a viable population.
- Monitoring shall be implemented for a 5-year period. Year 1: Dark-eyed gilia seeds will be collected from the Project footprint and broadcast at designated restoration macroplots. The remaining population outside of the footprint will be preserved. Year 2-5: Dark-eyed gilia plants detected at or near designated macroplots and at or near Native Plant Protection Area on-site shall indicate success. Annual monitoring will begin by navigating by GPS to the established macroplots. Transects spaced every 3m will be carefully walked to search for and count dark-eyed gilia plants. If plants become too numerous to reliably count, a systematic sampling scheme may be implemented to obtain a good population estimate. The assessment of population health and adaptive management recommendations for additional reseeding shall be included in annual reports submitted to the Planning and Building Department for approval.

With the implementation of Mitigation Measure BIO-1, potential impacts to special status dark-eyed gilia will be less than significant.

Special Status Terrestrial Mammals

Potential impacts to special status terrestrial mammals were evaluated in the Project's Terrestrial Biological Resources Report (Appendix C). There is one special status terrestrial mammal, the North American Porcupine, with the potential to be impacted by the Project.

North American Porcupine (Erethizon dorsatum)
California State Special Status Species (G5 S3), Moderate Potential

Both the Project Site and greater PSB contain requisite foraging habitat for this species. Based on nearby records and available habitat, the species has a moderate potential to be present and forage within the Project Site and PSB. Potential Project impacts to terrestrial mammals are expected to be limited to ground disturbance/excavation. While elevated levels of noise at the Project Site may disturb terrestrial mammals in the vicinity, no impacts are expected as the species are highly mobile and likely to leave the area once noisy construction activities commence. If present in the Project Site or PSB during construction activities, the species may be injured or trapped in open excavation pits. In addition, the species may be impacted if rodenticides are used on-site. Thus, the potential for significant impacts to North America Porcupines could occur. Potential Project-related impacts to this species (if any) would be avoided through the implementation of Mitigation Measure BIO-2.

Mitigation

Mitigation Measure BIO-2 would reduce the impact of the Project on special status terrestrial mammals to less-than-significant levels by requiring overnight covers for open-trenches, disallowing dogs on the Project Site, and disallowing unattended injurious materials during construction and operations.

> **Mitigation Measure BIO-2: Protect Special Status Terrestrial Mammals**
>
> The construction plans will specify that steep-sided excavations capable of trapping mammals shall be ramped or covered if left overnight. No pets (i.e., dogs) shall be allowed on the Project Site. No poisons (including anticoagulant rodenticides) or other potentially injurious materials attractive to mammals shall be utilized or left unattended during construction or operation activities.

With the implementation of Mitigation Measure BIO-2, potential impacts to special status terrestrial mammals would be less than significant.

Special Status Bats

Potential impacts to special status bats were evaluated in a Bat Habitat Assessment conducted by bat expert Greg Tatarian of Wildlife Research Associates (WRA 2021, Appendix C-1). While special status bats were not observed on the Project Site, they do have the potential to occur within the PSB. Habitat for bats (buildings, crevices, pipe holes, etc.) is present at the Project Site based on reconnaissance level surveys. Structures on the Project Site may provide habitat for a variety of bat species. Construction of the Project may impact special status bat species through the removal or modification of structures as well as potential noise disturbance.

The Bat Habitat Assessment included a visual survey of the exterior surfaces and perimeters of the structures and interior spaces of all structures safe to enter showed that three of the fifteen structures contained evidence of past or present use by roosting bats. Some structures offer no suitable roost habitat for bats due to excessive light and airflow or other factors, while some structures containing no evidence of past or present use by bats have features that could potentially be used by bats that could be displaced from existing roost structures. Night roost use was more clearly indicated in the three buildings; maternity roost usage was not clearly indicated or precluded, though certainty would require follow-up surveys during maternity season. No overwintering bats were observed in any of the roost features that could be surveyed. Large populations were not indicated, based on staining and fecal accumulations (WRA 2021).

No indications of Species of Special Concern (SSC) bats were present, including Townsend's big-eared bat (*Corynorhinus townsendii*) and pallid bat (*Antrozous pallidus*); all signs present indicate Myotis species, most likely Yuma myotis (*Myotis yumanensis*) or little brown bat (*Myotis lucifugus*). Although the timing of the demolition of the three buildings with evidence of bat use (Pump House (SUB BF2), SUB FL.2, and Filter/Softener Tank Building) will be restricted and require mitigation activities, as described below, the majority of the buildings at the Project Site can be demolished without restriction related to bat habitation. While no larger colonies were observed during initial surveys, if colonies totaling greater than 1,000 individuals of a non-SSC bat such as either *M. yumanensis* or *M. lucifugus* are present during follow up surveys in any of the previously occupied structures, this could be considered a significant local nursery site under CEQA. In order to ensure

potential significant impacts to special status bats or bat colonies greater than 1,000 individuals do not occur, Mitigation Measure BIO-3 will be implemented.

Mitigation

Mitigation Measure BIO-3: Protect Special Status Bats

Two additional surveys of the interiors of the three previously occupied structures shall be conducted by a qualified bat biologist; one in late April or early May when likely occupied by females just before or after parturition, and one in mid-June when pups would be present.

If maternity colonies are present, demolition activities shall first be conducted on structures located furthest from the occupied structures (>500' – e.g. Machine Building) and limited to mechanical removal only (no explosives) until after young are self-sufficiently volant. After that time and after non-occupied structures are removed, specific measures to cause bats to safely abandon the occupied roosts would be conducted between September 1 and about October 15, or between about March 1 and April 15, at which time explosives could be used for demolition.

If day roosts are occupied only by males or by non-reproductive females, demolition of structures further than 300' should first be conducted since no non-volant bats would be present. After non-occupied structures are removed, specific measures to cause bats to safely abandon the occupied roosts would be conducted between September 1 and about October 15, or between about March 1 and April 15.

The following protocol shall be adhered to:

1) The following buildings will be removed as part of first phase of demolition:
   a. Machine Building
   b. Warehouse
   c. Existing Offices
   d. Brick Silos (all)
   e. Structure (concrete)
   f. Structure 2 (concrete)
   g. 3-Story Boiler Building
   h. 2-Story Building Near Smokestack
   i. Elevated Water Tanks

2) Following removal of the Buildings above, the Smokestack, 12-Story Boiler Building (using explosives/conventional demolition), and Concrete Foundations Structures and Footings may be removed *only*:

   a. During seasonal periods of bat activity:

      i. Between about March 1 (or after evening temperatures 1-2 hours before sunset rise above 45F and/or no more than 1/2" of rainfall occurs 24 hours before or after planned habitat removal), and April 15, or;

ii. Between September 1 and about October 15, but only when evening temperatures 1-2 hours before sunset are above 45F and/or no more than 1/2" of rainfall occurs 24 hours before or after planned habitat removal.

3) Follow these procedures for Pump House (SUB BF2), SUB FL.2, and Filter/Softener Tank Building:

i. Open all doors.

ii. Remove louvered vents if present and any window covers.

iii. Install LED work lights aimed toward ceiling throughout building in quantity noted for each building; operate only during nighttime hours, switching off each morning.

iv. Install large (24" – 36" diameter) air circulating fans aimed towards ceilings (1 for each enclosed space); operate only during nighttime hours, switching off each morning.

v. Conduct a follow-up survey 4-7 nights after steps i-iv above;

a) If bats are present, a qualified bat biologist will recommend additional actions to cause bats to abandon the roosts.

b) If no bats are present, begin demolition of buildings within 7 days.

While unlikely based on the findings of the bat investigation (WRA 2021), the implementation of Mitigation Measures BIO-3 would protect against potential project impacts to special status bats and large bat colonies, sufficiently reducing the potential effect to be less than significant.

Special Status Amphibian and Reptile Species

Northern Red-legged Frog (Rana aurora)
CDFW SSC, Moderate Potential

Northern red-legged frogs (NRLF) are relatively common in and near coastal portions of Humboldt County and historical records have documented the species nearby (within approximately 5 miles of the Project Site). The Project Site contains some habitat for this species. There is one anthropogenic rectangular pool on-site where other frog species were observed. No NRLF tadpoles were observed during dip-netting sampling. This species has moderate potential to occur with the Project Site and PSB. If present in the Project Site or PSB during construction activities, the species may be injured or killed via crushing, entrapment, or burying (related to ground disturbance), resulting in a significant impact. Potential Project-related impacts to this species (if any) would be reduced to be less than significant through the implementation of Mitigation Measure BIO-4.

Mitigation

Mitigation Measure BIO-4: Protect Special Status Amphibians

- No more than one week prior to commencement of ground disturbance within 50 feet of suitable NRLF habitat (e.g., pools, riparian areas, damp

meadows), a qualified biologist shall perform a pre-construction survey for NRLF, and shall relocate any individuals or egg masses that occur within the work-impact zone to nearby suitable habitat.

- If any NRLF are observed during the pre-construction survey, CDFW shall be consulted to determine the best way to avoid impacts to NRLF. Ground-disturbing activities should be conducted during the dry season (May 15-October 15) to minimize take of NRLF. If construction activities are conducted within the dry season (May 15-October 15), exclusion fencing shall be installed around the work area prior to October 15 to prevent NRLF from migrating into work areas. The fencing material and design shall be reviewed and approved in writing by CDFW before installation.
- In the event a NRLF is encountered on-site during construction, all construction activities will cease until the animal has left the Project area on its own and is no longer in danger of harm. The project construction manager or project biologist will report the sighting to CDFW within 24 hours. No one other than a CDFW-approved biologist is permitted to handle or capture NRLF, and NRLF will not be taken or harassed.
- An Environmental Awareness Training will be provided to the construction crew prior to the commencement of construction activities. This "tailgate" training is intended to enable the construction crew to be able to identify NRLF and to safely relocate them outside of the Project Site.

With the implementation of Mitigation Measure BIO-4, potential impacts to special status amphibians will be less than significant.

Passerines and Raptors

The Terrestrial Biological Resources Report (Appendix C, GHD 2021a) evaluated potential impacts to special status birds (identified in Table 4-4) that could potentially be impacted by project construction and operations, and concluded Marbled Murrelet, Black Brant, Snowy Egret, Caspian Tern, Long-billed Curlew, Bald Eagle, California Brown Pelican, Bank Swallow, would not be significantly impacted by the Project, due to habitat requirements, lack of nesting requisites, existing conditions of the Project Site, etc. Additional species are evaluated below.

Sharp-shinned Hawk (Accipiter striatus)
CDFW Watch List, Present

Sharp-shinned Hawks are year-round residents across most densely forested areas of western and eastern North America. There are multiple recent records from the immediate Project vicinity (approximately 5-mile radius around Project Site). This is a common species known to nest and forage in urban and rural areas. If nesting at the Project Site or PSB during construction activities, the species may be impacted by elevated levels of noise and anthropogenic disturbance (no removal of potential nesting habitat is expected). Potential Project-related impacts to this species (if any) would be reduced to a less than significant level with the implementation of Mitigation Measure BIO-5.

Great Egret (Ardea alba)
CDFW Special Animals List (S4), Moderate Potential

Great Egrets are year-round residents in western California, with breeders concentrated in the Klamath and Warner basin in Siskiyou and Modoc Counties, along the coast in Humboldt County. There are numerous recent records from the immediate Project vicinity (approximately 5-mile radius around Project Site) including evidence of nesting (e.g., rookeries such as Indian Island). There is also a recent record from the Project Site. The lack of large nest trees at the Project Site or within the PSB precludes the chance of breeding on-site. The Project Site contains marginal foraging habitat (man-made, concrete, large flooded pool) for this species. The PSB contains requisite foraging habitat for this species along the Humboldt Bay shoreline. Given the presence of suitable habitat and recent records from the vicinity, there is moderate potential for the species to occur at the Project Site and within the greater PSB. If nesting at the Project Site or PSB during construction activities, the species may be impacted by elevated levels of noise and anthropogenic disturbance (no removal of potential nesting habitat is expected). Potential Project-related impacts to this species (if any) would be reduced to a less than significant level with the implementation of Mitigation Measure BIO-5.

Great Blue Heron (Ardea herodias)
CDFW Special Animals List (S4), Moderate Potential

Great Blue Herons are year-round residents in the majority of coastal and central California. There are numerous recent records from the immediate Project vicinity (approximately 5-mile radius around Project Site), including evidence of nesting. Rookeries are present on Woodley and Indian Islands in nearby Humboldt Bay. There is also a recent record from the Project Site. The lack of large nest trees in the PSB precludes the chance of nesting and breeding on-site. However, both the Project Site and greater PSB contain requisite foraging habitat for this species. Based on nearby records and available habitat, the species has a moderate potential to be present and forage within the Project Site and PSB. While unlikely, if nesting at the Project Site or PSB during construction activities, the species may be impacted by elevated levels of noise and anthropogenic disturbance (no removal of potential nesting habitat is expected). Potential Project-related impacts to this species (if any) would be reduced to a less than significant level with the implementation of Mitigation Measure BIO-5.

Vaux's Swift (Chaetura vauxi)
CDFW SSC, Moderate Potential

Vaux's Swifts are summer residents in California, breeding on the coast from central California northward and in the Cascades and Sierra Nevada mountains. There are multiple recent records from the immediate Project vicinity (approximately 5-mile radius around Project Site). The closest known record is from 2019 in the town of Samoa, within 1 mile of the Project Site. Nesting habitat may be present, as the species will occasionally nest in buildings/chimneys. The 270-foot smokestack is a smooth concrete structure with a concentric inner stack made of firebrick, with lining between the two concentric stacks at the base, tapering to none near the top opening, and a coating over the interior brick of the inner stack (WRA 2021). Due to safety considerations, the ability to survey the smokestack for bird use was limited. Based on the lack of protected roost crevices or cavities observed and lack of bird droppings, visible from the base opening up about 100 feet, the smokestack likely provides poor habitat suitability for the Vaux's Swift and other bird species. In addition,

the species is a generalist when it comes to foraging habitat, and presence is possible. Vaux's Swift have a moderate potential to occur at the Project Site and within the PSB. If present in the Project Site or PSB during construction activities, the species may be impacted by elevated levels of noise and anthropogenic disturbance (no removal of potential nesting habitat is expected). Potential Project-related impacts to this species (if any) would be reduced to a less than significant level with the implementation of Mitigation Measure BIO-5.

Northern Harrier (Circus hudsonius)
CDFW SSC, High Potential

Northern Harriers are a widely distributed raptor species, with year-round residents on the California coast, northeastern portion of the state, and the Central Valley. There are multiple recent records from the immediate Project vicinity (approximately 5-mile radius around Project Site) including evidence of nesting. The closest known record is from 1991 within the Project Site. Both the Project Site and greater PSB contain suitable nesting and foraging habitat for this species. Based on nearby records and available habitat, the species has a moderate potential to be present, nest, and forage within the Project Site and PSB. If present in the Project Site or PSB during construction activities, the species may be impacted by elevated levels of noise and anthropogenic disturbance (no removal of potential nesting habitat is expected). Potential Project-related impacts to this species (if any) would be reduced to a less than significant level with the implementation of Mitigation Measure BIO-5.

White-tailed Kite (Elanus leucurus)
CDFW Fully Protected Species, Moderate Potential

White-tailed Kites are year-round residents in most of California west of the Sierras, including the majority of the coastal foothills, Central Valley, and some arid regions such as Kern and Inyo Counties. There are multiple recent records from the immediate Project vicinity (approximately 5-mile radius around Project Site) including evidence of nesting. The closest known record is from 1991 within the Project Site. Both the Project Site and greater PSB contain requisite nesting and foraging habitat. Based on nearby records and available habitat, the species has a moderate potential to be present, nest, and forage within the Project Site and PSB. If present in the Project Site or PSB during construction activities, the species may be impacted by elevated levels of noise and anthropogenic disturbance (no removal of potential nesting habitat is expected). Potential Project-related impacts to this species (if any) would be reduced to a less than significant level with the implementation of Mitigation Measure BIO-5.

Black-crowned Night-Heron (Nycticorax nycticorax)
CDFW Special Animals List (S4), Moderate Potential

There are numerous recent records from the immediate Project vicinity (approximately 5-mile radius around Project Site) including evidence of historical nesting. The closest known record is from 2009 in the town of Samoa, within 1 mile of the Project Site. Rookeries are present on Tuluwat Island in the nearby Humboldt Bay and in Fairhaven south of the Project Site. The Project Site only contains marginal foraging habitat (man-made pool) for this species. The PSB contains requisite foraging habitat for this species along the Humboldt Bay shoreline. Based on nearby records and available habitat, the species has a moderate potential to be present and forage within the Project Site and PSB. Construction will not

occur on the shoreline of Humboldt Bay or within in-water habitat of Humboldt Bay. Potential Project-related impacts to this species (if any) would be reduced to a less than significant level with the implementation of Mitigation Measure BIO-5.

Osprey (Pandion haliaetus)
CDFW Watch List Species, Present

Ospreys have a cosmopolitan distribution and their breeding range throughout North America is widespread. There are numerous Osprey nest sites within and adjacent to the Project Site. During the reconnaissance survey, several nests were observed occupied (other nests are assumed to be historical). The species is considered to be present at the Project Site and within the PSB. If present in the Project Site or PSB during construction activities, the species may be impacted by elevated levels of noise and anthropogenic disturbance. In addition, potential/historical nest sites may be impacted by construction activities. There is a management plan for this species at the Project Site which details nest site protection measures, nest removal, and creation of new nest sites. This management plan is being developed in close coordination with the CDFW. Potential Project-related impacts to this species (if any) would be reduced to a less than significant level with the implementation of Mitigation Measure BIO-5.

Double-crested Cormorant (Phalacrocorax auritus)
CDFW Watch List Species, Moderate Potential

There are numerous recent records of Double-crested Cormorants from the immediate Project vicinity (approximately 5-mile radius around Project Site) including evidence of nesting (CDFW 2020a, eBird 2020). The closest known record is from 2009 in the town of Samoa, within 1 mile of the Project Site (eBird 2020). The Project Site does not contain suitable habitat for this species. The PSB contains requisite foraging habitat within Humboldt Bay, but no nesting habitat is present. The species has no potential to occur at the Project Site and a moderate potential to occur within the PSB. Construction would not occur on the shoreline of Humboldt Bay or within in-water habitat of Humboldt Bay. Potential Project-related impacts to this species (if any) would be reduced to a less than significant level with the implementation of Mitigation Measure BIO-5.

Mitigation

Mitigation Measure BIO-5: Protect Special Status, Migratory, and Nesting Birds

Ground disturbance (i.e., ground densification and building demolition) and vegetation clearing shall be conducted, if possible, during the fall and/or winter months and outside of the avian nesting season (March 15 – August 15) to avoid any direct effects to special status and protected birds. Prior to the issuance of a any construction or demolition permit and/or commencing of densification, ground disturbance, and/or vegetation clearing, the applicant shall submit a construction timeline indicating dates of work to be implemented to the Planning and Building Department for approval.

If ground disturbance cannot be confined to work outside of the nesting season, a qualified ornithologist shall conduct pre-construction surveys within the vicinity of the Project Site to check for nesting activity of native birds and to evaluate the site

for presence of raptors and special status bird species in the buildings subject for demolition. The ornithologist shall conduct at minimum a one-day pre-construction survey within the 7-day period prior to vegetation removal and ground-disturbing activities. If ground disturbance or vegetation removal work lapses for seven days or longer during the breeding season, a qualified ornithologist shall conduct a supplemental avian pre-construction survey before Project work is reinitiated.

If active nests are detected within the construction footprint or up to 500 feet from construction activities, the ornithologist shall flag a buffer around each nest (assuming property access). A plan showing the buffer shall be submitted to the Planning and Building Department prior to commencement of construction activities. Construction activities shall avoid nest sites until the ornithologist determines that the young have fledged, or nesting activity has ceased. If nests are documented outside of the construction (disturbance) footprint, but within 500 feet of the construction area, buffers will be implemented as needed (buffer size dependent on species). Buffer sizes for common species would be determined on a case-by-case basis in consultation with the CDFW and, if applicable, with USFWS. Buffer sizes will take into account factors such as (1) noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity; (2) distance and amount of vegetation or other screening between the construction site and the nest; and (3) sensitivity of individual nesting species and behaviors of the nesting birds.

If active nests are detected during the survey, the qualified ornithologist shall monitor all nests at least once per week to determine whether birds are being disturbed. Activities that might, in the opinion of the qualified ornithologist, disturb nesting activities (e.g., excessive noise), shall be prohibited within the buffer zone until such a determination is made. If signs of disturbance or distress are observed, the qualified ornithologist shall immediately implement adaptive measures to reduce disturbance. These measures may include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed or nesting activity has ceased, placement of visual screens or sound dampening structures between the nest and construction activity, reducing speed limits, replacing and updating noisy equipment, queuing trucks to distribute idling noise, locating vehicle access points and loading and shipping facilities away from noise-sensitive receptors, reducing the number of noisy construction activities occurring simultaneously, and/or reorienting and/or relocating construction equipment to minimize noise at noise-sensitive receptors. Upon completion of the survey, a memo will be provided to the Planning and Building Department that will describe the methods and results of the survey and any related recommendations. All requirements and recommendations of the ornithologist shall be conditions of the Coastal Development Permit and shall be incorporated into the construction plans.

With the implementation of Mitigation Measure BIO-5, potential impacts to special status, migratory, and nesting birds would be less than significant.

Special Status Marine Mammals

No in-water work in Humboldt Bay is proposed as part of this Project. Given no work in Humboldt Bay is proposed and standard BMPs to protect water quality would be implemented, no impacts to special status marine mammals as a result of impediments to water quality or aquatic habitat in nearby Humboldt Bay would result.

Biological noise was evaluated in the Hydroacoustic, Noise, and Vibration Assessment (Illingworth and Rodkin 2020, Appendix J). Impact analysis included evaluation of noise and vibration resulting from three potential soil densification construction methods, including rammed aggregate piles, vibro displacement columns, and vibro soil densification. Impact analysis also evaluated noise and vibrations that would result from installation of sheet piling using a vibratory pile driver and installed to a depth of approximately 30 feet (Appendix J). Construction noise and vibration from the Project Site would not propagate to the Pacific Ocean; thus, marine noise-related impacts in the Pacific Ocean would not result (Appendix J).

Under the Marine Mammal Protection Act, NMFS has defined levels of harassment for marine mammals. Level A harassment is defined as “Any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild” (16 USC 1361-1407). Level B harassment is defined as “Any act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including but not limited to migration, breathing, nursing, breeding, feeding or sheltering” (16 USC 1361-1407).

The Marine Resources Biological Evaluation (Appendix D, GHD and H.T. Harvey 2021) evaluated potential impacts to special status marine species (identified in Table 4-4) that could potentially be impacted by the ocean effluent discharge from the RMT II outfall. Evaluated species with moderate or high potential to be present with the PSB include California Sea Lion, Stellar Sea Lion, Pacific Harbor Seal, Gray Whale, and Harbor Porpoise. The Marine Resources Biological Evaluation concluded all evaluated special status marine species would have a very low risk of any potential impact resulting from the RMT II outfall discharge, due to their highly mobile foraging behavior along the coast, migratory behaviors, distance from breeding colonies to the diffusers, etc. Any potential impact would be less than significant.

Rammed Aggregate Piles, Vibro Displacement Columns, and Vibro Soil Densification Noise

Very small Level A injury zones for low, mid, and high frequency cetaceans would result from construction methods utilizing rammed aggregate piles, vibro displacement columns, and vibro soil densification. The Level A injury zones would border the edge of the shoreline when construction occurs on the eastern portion of the Project Site nearest Humboldt Bay. The size of the Level A injury zones varies by type of cetacean, as detailed below. Noise thresholds applicable to marine mammals would be very small when construction occurs on the eastern portion of the Project Site nearest Humboldt Bay.

- Mid frequency cetaceans (e.g. dolphins, toothed whales, beaked whales, and bottlenose whales) would have the smallest potential Level A injury zone of less than 1 foot and thus would not be impacted.
- Low frequency cetaceans (e.g. Humpback Whales and Gray Whales) would have a potential Level A injury zone of approximately 11 feet.

- High frequency cetaceans (e.g. porpoises) would have the largest potential Level A injury zone of approximately 17 feet (Appendix I).

The Level A injury zone for phocid pinnipeds (e.g. true seals including Harbor Seals) would be approximately 7 feet from the shoreline. There are no documented haul out zones for Harbor Seals near the Project Site (CDFW 2012); thus, impacts to Harbor Seals would not result, especially given the small 7-foot Level A injury zone so close to the shoreline of Humboldt Bay. There would be no Level A injury zone for otariid pinnipeds (e.g. sea lions and fur seals), avoiding the potential for impact.

Mudflats and intertidal habitats extend beyond 17 feet from the shoreline, limiting depths, even during high tide. Whales, dolphins, and other marine mammals would be unlikely to be present so close to shore (within approximately 17 feet) and thus unlikely to be detrimentally by rammed aggregate piles, vibro displacement columns, and vibro compaction Level A injury zone noise. Any potential impact would be less than significant.

The Level B injury zone (See Image 4-7 below) for behavioral harassment resulting from construction methods utilizing rammed aggregate piles, vibro displacement columns, and vibro compaction could extend as far into Humboldt Bay as approximately 330 feet for all marine mammal species when soil densification construction methods are implemented on the eastern portion of the Project Site nearest Humboldt Bay (specifically, southeast corner of the Phase 2 Grow-Out Module as shown in Figure 2 of Appendix J) for all three construction options (Appendix J).The 330-foot radius is also within the confines of the existing dock, and marine mammals would be unlikely to be present within this zone during construction for long periods. However, if present, soil densification construction occurring within the southeast corner of the Phase 2 Grow-Out Module could result in a potentially significant Level B injury (behavior harassment) impact to marine mammals. Mitigation Measure BIO-5a would be incorporated into the Project to reduce the potential impact to a less than significant level.

Image 4-7 Level B Marine Harassment Zone (Illingworth and Rodkin 2020)

Mitigation

Mitigation Measure BIO-5a: Limits on Soil Densification Construction to Avoid Impacts to Marine Mammals

When soil densification construction occurs within the Phase 2 Grow-Out Module footprint as shown in Image 4-7 above (Illingworth and Rodkin 2020, Appendix J), soil densification shall only occur when the tidal surface water elevation is below the 330-foot (100 meter) radius where Level B injury could occur. Final construction plans shall show the tidal elevation that corresponds with the 330-foot radius shown in Figure 2 of the Project's Hydroacoustic, Noise, and Vibration Assessment (Illingworth and Rodkin 2020, Appendix J). In addition, final construction plans shall also show the explicit portion of the Phase 2 Grow-Out Module required to adhere to soil densification construction during low tide conditions.

With the implementation of Mitigation Measure BIO-5a, soil densification construction would not occur when the 330-foot radius was tidally inundated, reducing the potential impact to marine mammals to a less than significant level.

Special Status Fish

No in-water work in Humboldt Bay is proposed as part of this Project. Given no in-water work in Humboldt Bay is proposed and standard BMPs to protect water quality would be implemented,), no impacts to special status fish as a result of impediments to water quality or aquatic habitat in nearby Humboldt Bay would result.

Potential noise impacts to special status fish were also evaluated in the Hydroacoustic, Noise, and Vibration Assessment (Appendix J). Possible construction methods, including rammed aggregate piles, vibro displacement columns, and vibro soil densification would not

result in any noise-related impacts to special status fish in Humboldt Bay or the Pacific Ocean (Appendix J).

Given no in-water work in Humboldt Bay would occur, and the implementation of BMPs to protect water quality in Humboldt Bay, and the lack of construction-related noise impacts, any potential impact to special status fish in Humboldt Bay would be less than significant.

Marine impacts related to the ocean effluent discharge are analyzed for applicable species below, as documented in GHD and H.T. Harvey (2021). Construction noise and vibration from the Project Site would not propagate to the Pacific Ocean; thus, marine noise-related impacts to special status marine species would not result (Appendix J).

The Marine Resources Biological Evaluation (Appendix D, GHD and H.T. Harvey 2021) evaluated potential impacts to special status fish species (identified in Table 4-4) that could potentially be impacted by the ocean effluent discharge from the RMT II outfall. Special status fish species with moderate or high likelihood to occur with the PSB include Green Sturgeon, Southern Oregon/Northern California Coast Coho Salmon Evolutionarily Significant Unit (ESU), California Coast Chinook Salmon ESU, Northern California Steelhead DPS, and Pacific Lamprey. The Marine Resources Biological Evaluation concluded all evaluated special status marine species would have a very low risk of any potential impact resulting from the RMT II outfall discharge. Adult Green Sturgeon are highly mobile along the coast and bays, therefore, their exposure to the diffuser effluent is likely to be short term. Coho Salmon are highly mobile in marine coastal habitats and migrate rapidly through Humboldt Bay, therefore, their exposure to the diffuser effluent would be short term, if at all. Chinook Salmon are highly mobile, their exposure to the diffuser effluent is likely to be short term. Steelhead, of all of the salmonids, are the least likely to remain in coastal waters, so their exposure to the diffuser effluent is likely to be low/short term. Pacific Lamprey are assumed to be in the PSB relative to the hosts they are dependent upon only briefly, if at all. Since their hosts are highly mobile, their exposure to diffuser effluent would be short term. Based upon these behavioral characteristics, any potential impact to special status fish would be less than significant. Potential impacts to fish habitat are discussed below.

Marine Critical Habitat

Marine critical habitat was evaluated in the Marine Resources Biological Evaluation (GHD and H.T. Harvey 2021); results are summarized below.

In October 2009, the National Marine Fisheries Service (NMFS) designated all nearshore waters to a depth of 60 fathoms (360 ft or 110 m) offshore Humboldt Bay in the Pacific Ocean as critical habitat for the southern distinct population segment (DPS) of the Green Sturgeon (74 FR 52300). This critical habitat includes the PSB. The primary constituent elements for Green Sturgeon in nearshore coastal marine areas include:

1) Migratory corridor -- A migratory pathway necessary for the safe and timely passage of Southern DPS fish within marine and between estuarine and marine habitats;
2) Water quality -- Nearshore marine waters with adequate dissolved oxygen levels and acceptably low levels of contaminants (e.g., pesticides, organochlorines, elevated levels of heavy metals) that may disrupt the normal behavior, growth, and viability of subadult and adult Green Sturgeon; and

Food resources -- Abundant prey items for subadults and adults, which may include benthic invertebrates and fishes.

Effects of the Project on primary constituent elements of Green Sturgeon critical habitat are not anticipated for the following reasons:

- The Project would use the existing RMT II ocean outfall and multiport diffuser, which would not affect the migratory corridor primary constituent element;
- Changes to water quality would be very limited in spatial extent and should not adversely affect the water quality primary constituent element; and
- Changes to benthic ecosystem productivity would be spatially limited to an area in proximity of the diffuser structure and should not adversely affect the food resources primary constituent element.

Any potential impact to critical habitat for Green Sturgeon would be less than significant.

Critical habitat for California Coast Chinook and Southern Oregon/Northern California Coast Coho Salmon does not extend into the open ocean and does not include the PSB. Critical habitat was designated in 2005 and consists of river reaches between Redwood Creek south to Point Arena on the Mendocino coast (70 FR 52488). Critical habitat for Northern California Steelhead also does not extend out into the open ocean and does not include the PSB (GHD and H.T. Harvey 2021). Thus, there would be no impact to critical habitat for salmonids.

Essential Fish Habitat

Essential Fish Habitat (EFH) was evaluated in the Marine Resources Biological Evaluation (GHD and H.T. Harvey 2021); results are summarized below.

EFH identifies waters and substrates required by fish for spawning, breeding, feeding, and growth to maturity. EFH waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish. For Pacific coast species, EFH is described under four fishery management plans (FMPs) covering groundfish, coastal pelagic species, highly migratory species, and Pacific coast salmon (as detailed in the following sections). The PSB does not include any Habitat Areas of Particular Concern (HAPCs).

Pacific Groundfish EFH

Pacific groundfish represent a large number of resident species along the U.S. West Coast. The northern California coast provides groundfish habitat from the nearshore mean higher high water or the upstream extent of saltwater intrusion, to deepwater areas seaward to the boundary of the U.S. Exclusive Economic Zone (EEZ) (PFMC 2006). In 1998, the Pacific Fishery Management Council (PFMC) made more than 400 EFH designations for 82 groundfish species (PFMC 2006). The PFMC further defined important habitat by species and life stage. Species likely to occur in the PSB include flatfishes (e.g., speckled sanddab (*Citharichthys stigmaeus*), Pacific sanddab (*C. sordidas*)), rockfishes (e.g., black rockfish (*Sebastes melanops*, blue rockfish (*S. mystinus*)), lingcod (*Ophiodon elongates),* cabezon *(Scorpaenichthys marmoratus),* and kelp greenling *(Hexagrammos decagrammus).* The Project would use the existing RMT II ocean outfall and multiport diffuser structure, and the effects of the discharge do not result in significant benthic impacts based on limited spatial area and organic loading, resulting in a low risk of adverse effects to the groundfish EFH in proximity to the diffuser (see Section 6 of Appendix E – Numeric Modeling Report, GHD 2021b). Any potential impact to Pacific Groundfish EFH would be less than significant.

Highly Migratory Species EFH

Highly migratory species are pelagic fish species such as tunas, marlins, and sharks that occur worldwide and are highly mobile. They can be found in both the EEZ region out to 230 mi (370 km) from shore and the high seas. Pelagic fish off the northern California coast with EFH in the PSB include the common thresher shark (*Alopias vulpinus*) and bigeye thresher shark (*Alopias superciliosus*). Reproduction of common thresher shark occurs considerably farther south of the PSB, pups are known to come into shallow waters and bays, and adults are generally found farther offshore in 1,197–1,798 ft (365–548 m) depths. Similarly, adult bigeye thresher shark are found in deeper waters off northern California, as are albacore tuna (*Thunnus alalunga*), northern bluefin tuna (*Thunnus orientalis*), and broadbill swordfish (*Xiphias gladius*). Adult albacore tuna and juvenile northern bluefin tuna generally occur beyond the 100-fathom (fm) (183 m) isobaths, which makes them unlikely to occur within the PSB. Likewise, juvenile and adult broadbill swordfish tend to be offshore of the 1,000-fm (1,830-m) isobath, and are therefore unlikely to be in the PSB. Thus, any potential impact to EFH for highly migratory species would be less than significant.

Coastal Pelagic Species EFH

Coastal pelagic species live in the water column and are generally found anywhere from the surface to 3,281 ft (1,000 m) deep. Coastal pelagic species that may occur in offshore waters along the northern California coast, and potentially in the PSB, include six species/species groups that are actively managed: northern anchovy (*Engraulis mordax*), Pacific sardine (*Sardinops sagax*), Pacific mackerel (*Scomber japonicus*), jack mackerel (*Trachurus symmetricus*), California market squid (*Loligo opalescens*), and krill. The EFH for these species is marine and estuarine waters along the coast of northern California and offshore to the EEZ boundary line. Pacific mackerel, jack mackerel, and northern anchovy have been documented in or near the PSB. The Project would use the existing RMT II ocean outfall and multiport diffuser structure, and the effects of the discharge do not result in significant impacts to coastal habitat based on limited spatial area and organic loading, resulting in a low risk of adverse effects to the Coastal Pelagic Species EFH in proximity to the diffuser (see Section 6 of Appendix E – Numeric Modeling Report, GHD 2021b). Any potential impact to coastal pelagic species EFH would be less than significant.

Pacific Coast Salmon EFH

EFH for Chinook and Coho salmon includes rivers and coastal streams from central California to Alaska and oceanic waters along the United States and Canadian coasts and seaward to the north central Pacific Ocean and the high seas. The Project would use the existing RMT II ocean outfall and multiport diffuser structure, and the effects of the discharge do not result in significant impacts to pelagic habitat based on limited spatial area and organic loading, resulting in a low risk of adverse effects to the Pacific Coast Salmon EFH in proximity to the diffuser (see Section 6 of Appendix E). Any potential impact to Pacific Coast Salmon EFH would be less than significant.

Commercial and Recreational Fish Species

The Marine Resources Biological Evaluation (Appendix D, GHD and H.T. Harvey 2021) also evaluated potential impacts to non-special status commercial and recreation marine species that could potentially be present near the diffusers of the RMT II outfall. Evaluated species with moderate or high potential to be present with the PSB include Dungeness crab, starry

flounder, Pacific sand sole, lingcod, smelt, surfperch, sand shark, rock crabs, razor clam, gaper clam, cockles, octopus, sea stars, and prawns/shrimp. The Marine Resources Biological Evaluation concluded all evaluated non-special status marine species would have a very low risk of any potential impact resulting from the RMT II outfall discharge. Any potential impact would be less than significant.

b, c) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service, including wetlands? (Less-than-Significant with Mitigation)

The Humboldt Bay Area Plan and the Coastal Act define Environmentally Sensitive Areas as: "*any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments (Coastal Act Section 30107.5), including: areas of special biological significance as identified by the State Water Resources Control Board; rare and endangered species habitat identified by the State Department of Fish and Game; all coastal wetlands and lagoons; all marine, wildlife and education and research reserves; nearshore reefs; tidepools; sea caves; islets and offshore rocks; kelp beds; indigenous dune plant habitats; and wilderness and primitive areas.*"

Riparian Habitat

The Project Site does not include a stream, tributary, or other waterway with riparian habitat. Riparian habitat is not present on the Project Site. Thus, no impact to riparian habitat would result from the Project.

Sensitive Natural Communities

Vegetation mapping and an assessment of Sensitive Natural Communities was conducted for the Project Site (Appendix F, GHD 2021c). A Supplemental Soils and Anthropogenic Disturbance Investigation of Potential ESHA Technical Memo was prepared by GHD (2021g) to evaluate abiotic conditions and historic disturbance on-site to help inform the County's determination of potential ESHA. The quality of dune habitats was quantitatively assessed, and absolute cover was estimated for all species and bare areas.

Environmentally Sensitive Habitat Areas (ESHA)

Mapped Sensitive Natural Communities included dune mat, higher quality dune mat, coastal brambles, and coastal willow thickets, summarized below (GHD 2021c). Of these, the high quality dune mat was considered ESHA. The Project Site north was originally coastal dune habitat. The area has been completely regraded and impacted by various levels of development ranging from disposal of spoils materials, installation of septic systems, installation of large tanks uses to clarify freshwater and paving and buildings. The western perimeter of the site retains a remnant of a sand dune, but the dune has been substantially modified and has been significantly regraded. Vance Avenue follows the ridge of what was once a dune. The combination of the road installation and the grading resulted in the dune losing natural function of moving sand. There is a fence line paralleling the southern property line approximately 20 feet north of the property line. The fence sits on top of a graded berm. The area south of the berm and extending onto the adjoining property shows evidence of historic disposal of dredge spoils. The area north of the fence extending to the existing

paved areas and locations of the clarifiers has been graded, and includes wood piles, a very large leach field and associated septic tanks, steam pipes and other remnants of activity associated with the use of the site as a pulp mill.

Dune mat (Abronia latifolia-Ambrosia chamissonis Alliance) (G3 S3)

Both degraded dune mat and higher quality dune mat were mapped within the Project Site. A total of 6.72 acres of the APE was mapped as dune mat, and an additional 0.34 acres was mapped as higher quality dune mat (GHD 2021).

Dune mat is a Sensitive Natural Community ranked by NatureServe as Vulnerable globally (G3) and within the State of California (S3) and is an indigenous dune plant making it by definition ESHA. Much of the Area of Potential Effect (APE) contains dune mat species at diagnostic levels. Dune mat within the APE was primarily characterized by yellow sand verbena, seaside buckwheat, dune knotweed, beach strawberry, and sandmat. Rare dark-eyed gilia, which typically occurs in stabilized dunes, was also widespread in this community.

As discussed in Appendix F, quantitative analysis showed that dune mat to the north of the fence has intermediate levels of native cover compared to higher quality dune mat to the south. The northern dune mat area also had high non-native cover similar to bush lupine scrub. Dune mat areas south of the cyclone fence contained a dominance of native species, low overall cover of vascular plants, and low cover of non-native species. The area south of the cyclone fence contains a berm structure that is similar to natural dune topography, and areas of high-quality dune mat are characterized by mobile sand and a strong dominance of dune mat species (68% relative native cover and more natural dune processes with undulating topography and greater sand mobility, 27% absolute native cover). This area that consists of a berm resembling a natural sand dune and retains a high percentage of native cover is designated high quality dune habitat and for purposes of this analysis is considered ESHA, as discussed above. These areas of higher quality dune mat habitat constitute approximately 0.34 acres. These areas of ESHA will be protected by establishing a minimum 35-foot buffer from the nearest proposed Building 2. Within the 35-foot setback, a 20 foot wide pervious fire road will be constructed.

In contrast, dune mat plots north of the cyclone fence, near the current footprint of the pulp mill, showed diagnostic levels of native dune species (11% absolute cover), but they are dominated by non-native species (76% relative cover of non-native species). Some of the non-native species includes a large patch of Yellow Invasive Bush Lupine Scrub, which based on its growth pattern in rows following the septic leach lines, benefits from the presence of the aging septic system. This area due to the graded condition of the site, the improvements installed, the impact of the septic system on the vegetation pattern and the high concentration of non-native plants render this area not ESHA. Approximately 4.32 acres of dune mat would be impacted by the Project.

The 0.34 acres of mapped higher quality dune and would be protected as ESHA under Mitigation Measure BIO-6a and are located along the southern edge of the Project Site, south of Building 2. As noted above, anywhere dark-eyed gilia are found, the dark-eyed gilia will be replaced at a 3:1 ratio (MM BIO-1). High-quality dune mat would be protected under Mitigation Measure BIO-6a to avoid significant impacts.

Coastal willow thickets (Salix hookeriana Alliance) (G4 S3)

Coastal willow thickets are dominated by mature coastal willow (*Salix hookeriana*), with lower cover of other shrub species such as coyote brush (*Baccharis pilularis*). Coastal willow thickets are a Sensitive Natural Community with a state rank of S3 and thus Vulnerable in California. Coastal willow thickets primarily occurred in swale topography along Vance Avenue (east and west), and Brewer's rush (*Juncus breweri*) was common in the understory. Spatial data showing coastal willow thickets from the previous SHN mapping effort was incorporated into current mapping, and the southern willow thicket east of Vance Avenue was expanded slightly to include associated swale vegetation. Coastal willow thickets cover 0.28 acres of the APE. Coastal willow thickets would not be impacted as a result of the Project.

Coastal brambles (Rubus ursinus Alliance) (G4 S3)

Coastal brambles are a Sensitive Natural Community with a state rank of S3 and thus Vulnerable in California. Coastal brambles within the APE primarily consisted of mixed native shrubs, co-dominated by California blackberry (*Rubus ursinus*) with coast silk tassel (*Garrya elliptica*), coyotebrush (*Baccharis pilularis*), and wax myrtle (*Morella californica*) and are largely located along a cut slope of the site that has been highly modified. A mixture of native and non-native species occurred in the herbaceous layer. Coastal brambles occurred in a single 0.20-acre patch along the roadside ridge east of Vance Avenue. Approximately 0.01 acres of coastal brambles would be impacted as a result of the Project. Given the location in a highly modified location and the non-native vegetation mixed with the community, the coastal brambles are not considered ESHA. However, mitigation will be required to mitigate the loss of sensitive plant species.

Mitigation

Mitigation Measure BIO-6a: Implement Compensatory Mitigation for Sensitive Natural Communities

Loss of Sensitive Natural Communities (shall be mitigated through compensatory mitigation based on the ratios (acreages) stated below. Mitigation shall include removal of invasive European beachgrass, yellow bush lupine scrub, and other non-natives on- and off-site in locations where restoration planting is being conducted. On-site restoration is preferred.

- Coastal Brambles: No less than 3:1, on-site only
- Dune Mat: No less than 2:1, on-site and off-site (BIO-1 can be combined with this requirement in which case the mitigation ratio is 3:1)
- Pre-construction surveys for rare plants shall occur at both on-site and off-site mitigation areas, as identified in the RMP
- Annual success criteria shall be defined as follows:

Invasive Vegetation	1	≥50% Reduction in target invasive plant cover (absolute) at dune restoration sites.
	2	≥65% Reduction in target invasive plant cover at dune restoration sites.

	3	≥80% Reduction in target invasive plant cover at dune restoration sites.
	4	≥90% Reduction in target invasive plant cover at dune restoration sites.
	5	≥95% Reduction in target invasive plant cover at dune restoration sites.
Native Dune Mat	5	Dune restoration areas (at all sites) are dominated by native dune mat species (≥50% relative percent cover).
Native Coastal Brambles	5	Coastal brambles restoration areas are dominated by native species associated with the community (≥50% relative percent cover).
Maintenance	All Years	The restoration crew completed invasive plant removal on schedule.

Mitigation Measure BIO-6b: Construction Protocol for Protection of ESHA

Prior to issuance of any permits, orange net or other appropriate fencing shall be placed around the 35 foot ESHA setback or at the limit of the Fire Road encroachment. The fencing shall remain in place throughout the construction period to prevent vehicles, equipment, or materials from entering the ESHA. The grading plans for the project site shall design finished pad grades to not result in grade changes at the edge of the buffer or fire road within the ESHA buffer.

With the implementation of Mitigation Measure BIO-6a, potential impacts to Sensitive Natural Communities will be less than significant.

Wetlands

A wetland delineation was completed for the Project Site (Appendix F, GHD 2021c). The investigation included mapping of wetland boundaries to meet the three-parameter definition of the U.S. Army Corp of Engineers (USACE) and the one-parameter definition of the Local Coastal Plan. Coastal willow thickets within the APE are characterized by a strong dominance of *Salix hookeriana*, a Facultative-Wetland species, and qualify as one-parameter wetlands in addition to being S3 Sensitive Natural Communities. These one-parameter wetlands directly east of Vance Avenue were revisited on February 10, 2021, and confirm findings from the May 2020 visit, which found these areas lack wetlands hydrology and soils, and are thus one-parameter wetlands. The coastal willow thickets would not be impacted as a result of Project construction or operation. Wetland fill would not occur. No direct impact to one-parameter or three-parameter wetlands would result. One- and three-parameter wetlands do exist west of Vance Avenue, but are outside of the Project Area.

The Project is located outside the urban limit. The Humboldt Bay Area Plan establishes a wetland setback of 100 feet to 200 feet for areas outside the urban limit, with the exact buffer dimensions dependent on site-specific characteristics. Delineated wetlands are small and of poor quality; thus, this analysis assumes an applied buffer of 100 feet.

Development within the buffer is allowable provided no more than 25% of the developed surface is effectively impervious, stormwater runoff does not detrimentally affect the

wetland, areas of temporary disturbance are restored and promptly replanted, and erosion impacts related to construction are minimized with BMPs.

East of Vance Avenue, on-site one-parameter wetlands are separated from the Project footprint, with setbacks ranging from approximately 53 feet to 64 feet. Development within the buffer would be predominantly limited to site grading and would not result in extensive new impervious surface. Following construction, graded surfaces would be reseeded and/or replanted as identified in the Project's landscaping plan. The Project's stormwater drainage system would route stormwater away from the one-parameter wetlands, avoiding any potential impact related to stormwater. Erosion control BMPs are included as Mitigation Measures under Section 4.7 – Geology and Soils. Given construction would maintain a buffer of at least 50 feet from any on-site one-parameter wetlands and that construction activities within the buffer would not result in detrimental effects from impervious surfaces, stormwater, erosion, or other environmental factors, the potential indirect impact to wetlands resulting from development within a wetland buffer would be less than significant.

Off-site one-parameter and three-parameter wetlands are located west of Vance Avenue and separated from the planned development and construction by Vance Avenue itself, which is a paved roadway that will continue to be used. The distance between off-site wetlands and the disturbance footprint ranges from approximately 25 feet to 53 feet. Project construction would not route any stormwater toward off-site wetlands, and off-site wetlands would not be affected by erosion or other detrimental environmental factors with the implementation of Mitigation Measure GEO-2 – Construction Best Management Practices. Given Vance Avenue is situated between delineated one- and three-parameter wetlands and the western edge of the Project, buffers for off-site wetlands are considered sufficient. The potential impact would be less than significant.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (Less-than-Significant)

Terrestrial Wildlife

The Project Site does not include established migratory corridors or native wildlife nursery sites. Under existing conditions, the Project Site is an industrial area with limited wildlife habitat. The Project would include large buildings that would require wildlife to move around the new structures. Areas surrounding the Project Site are open to unimpeded wildlife migration (e.g. limited fencing, low roadway density), which would remain the case following construction of the Project and during operation of the Project. The Project would not include a perimeter fence around the Project Site. Thus, wildlife would continue to be able to migrate through the Project Site via internal roadways, pathways, and low impact development (LID) features, as well as around the industrial Project Site. Fencing that encloses the inner campus would not present a significant barrier to the movement of wildlife. The migration of avian and bat species would remain unimpeded as a result of the Project. Any potential impact would be less than significant.

Aquatic Species

Aquatic habitat is not located on the Project Site but is located nearby in Humboldt Bay. Construction or operation of the Project would not include any in-water work and would thus

not result in a physical barrier to the migration of aquatic species. Potential impacts to aquatic species resulting from construction-related noise was assessed in the Hydroacoustic, Noise, and Vibration Assessment (Appendix J), which concluded none of the soil densification construction methods evaluated would reach or approach the harassment threshold for fish. Any potential impact would be less than significant.

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

Applicable local policies and ordinances include those in the Humboldt Bay Area Plan. The Project's adherence to applicable policies is documented below. The Project's consistency with applicable policies in the Humboldt Bay Area Plan is summarized in Table 4-5. Applicable policies require the Project's effluent discharge to protect beneficial uses and not discharge into a coastal wetland or area of special biological significance; neither would occur as a result of the effluent discharge. Additionally, as evaluated in Section 3.14 (a) above and documented in Appendix D and Appendix E, marine resources and the biological productivity of coastal waters would be maintained. The Project would not conflict with any policies in the Humboldt Bay Area Plan; thus, no impact would result.

Table 4-4 Consistency with Applicable Policies in the Humboldt Bay Area Plan

Policy	Project Adhere to Policy
3.14 Industrial – 131412.5 Coastal Marine Environment – Wastewater Discharge	The Project's effluent discharge would protect beneficial uses of receiving waters; ocean chemistry, mixing processes, and marine life conditions were also evaluations (Appendix E).
3.14 Industrial – 131412.5 Coastal Marine Environment – New Discharges	The Project's effluent discharge would not discharge into a coastal wetland or area of special biological significance, marine reserves, or kelp beds; the ecological balance of the receiving area would not be significantly impacted (Appendix E).
3.30 Natural Resources Protection Policies and Standards - ESHA	With the implementation of mitigation measures, ESHA located on the Project Site would not be significantly impacted (see 3.4 (b) above).
3.30 Natural Resources Protection Policies and Standards – Coastal Streams, Riparian Vegetation, and Marine Resources	Marine resources would be maintained. The Project's effluent discharge into the Pacific Ocean would not limit biological productivity in coastal waters (Appendix D and Appendix E).
3.30 Natural Resources Protection Policies and Standards – Coastal Streams, Riparian Vegetation, and Marine Resources Section 30231	The biological productivity and coastal waters would not be significantly impacted by the Project (Appendix D and Appendix E). Stormwater runoff would be controlled to avoid water quality impacts (Appendix H).

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (No Impact)

There are no adopted Habitat Conservation, Community Conservation, or approval local, regional, or state habitat conservation plans that apply to the Project. No impact would result.

4.5 Cultural Resources

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

Impact Analysis

A cultural resources survey was conducted by Roscoe and Associates (2020) within the Project Site and is the basis for analysis of this Section.

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? (Less-than-Significant)

Historical resources on the Project Site were documented and evaluated by Roscoe and Associates (2020). The Project would demolish the remaining structures of the former Samoa Pulp Mill. The evaluation of the Samoa Pulp Mill's historical significance for each of the four Evaluation Criteria established by the National Register of Historic Places (36 CFR 60.4) and the California Register of Historic Places conducted by Roscoe and Associates (2020) is summarized below.

> ***Criterion A****: The Samoa Pulp Mill is historically significant under Criterion A, at the local level of significance, and is associated with the industrial development of the Redwood Region of Northern California. The Samoa Pulp Mill was the first mill designed to utilize redwood waste materials in the United States and was another step in the transformation of the redwood logging and lumber industry in this region into the modern wood products industry. After 1998, when the Pulp Mill was sold by Louisiana Pacific, it passed through the hands of several owners and operated intermittently. Although there had been several other pulp mills in California during this period, at the time the Samoa Pulp Mill finally closed in 2009, it was the last pulp mill in operation in the state. In the interim, some buildings and structures have been demolished and the equipment removed and sold.*
>
> ***Criterion B****: The Samoa Pulp Mill is not associated with any individuals or events significant to the history of the community. While this lot was once part of the Hammond Lumber Company operation at Samoa, it appears to have remained largely open space until the Samoa Pulp Mill was constructed.*

***Criterion C**: The Samoa Pulp Mill is not of unique design or construction. It was designed according to a standard plan for pulp mills at that time, and utilized manufacturing processes typical of the industry. Recovery Boiler 3 was constructed in 1995 as the result of a major lawsuit in 1989-1991 regarding poor air quality and pulp mill emissions. The added air filtration system and the least toxic chemical processing equipment and procedures were notable improvements in design and function. However, these changes were recent and are not within the Period of Significance.*

***Criterion D**: Much of the Samoa Pulp Mill buildings and structures have been demolished, and the remaining buildings are not of unique design or construction and were not made of unique materials. The Samoa Pulp Mill Site itself does not appear to be capable of yielding information important in prehistory or history. Additionally, it is unlikely that archaeological deposits originating from the Samoa Pulp Mill operations would yield important information about prehistory or history. Furthermore, much of the information about this site, which could be used to answer important questions about history, is publicly housed in the archives at the Humboldt State University Library, Special Collections Room.*

The buildings and structures that would have constituted the core processing and manufacturing facilities of the Samoa Pulp Mill from the Period of Significance (c. 1965-1998) have largely been demolished. Most of the remaining buildings have deteriorated and are designated as health and safety hazards, not slated for repair or unsuitable for adaptive reuse. Consequently, the buildings and structures on the Project Site no longer retain any integrity. Based on this assessment, the remaining buildings and structures identified do not meet the National Historic Preservation Act (NHPA) Evaluation Criteria for either individually eligible historical resources or as contributors to a historic district.

Given the Evaluation Criteria for the California Register of Historic Places is consistent with NHPA Evaluation Criteria and the findings of Roscoe and Associates (2020) do not conflict with any other state policy, Humboldt County General Plan, or Humboldt Bay Area Plan pursuant to historic resources, any potential impact would be less than significant.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (Less-than-Significant with Mitigation)

The Humboldt Bay region and Samoa Peninsula were traditionally occupied by the Wiyot people. The cultural resource investigation completed by Roscoe and Associates (2020) included communication with tribal representatives, archival research, field investigation, and evaluation of the geotechnical borings. All field investigations were negative for evidence of cultural resources (Roscoe and Associates 2020). While no direct evidence of Wiyot habitation or use was encountered, much of the Project Site remains capped by cement. Most of the site was levelled/filled in the 1960s. In order to provide protection for archaeological resources that may be inadvertently discovered during the course of construction, Mitigation Measure CR-1 and Mitigation Measure CR-2 would be implemented to provide cultural resource monitors during construction and establish protocols for inadvertent archaeological discovery. With the implementation of Mitigation Measure CR-1 and Mitigation Measure CR-2, the potential impact would be less than significant.

On-site and off-site dune restoration, as included in the required Restoration and Monitoring Plan (RMP) (see Section 4.4) could result in minor disturbance of dune surfaces during revegetation. Given work would occur very near the surface, disturbance of cultural resources would be unlikely. Mitigation Measure CR-1 and Mitigation Measure CR-2 would

also apply to dune restoration and implementation of the RMP to ensure protocols for inadvertent discovery of cultural resources remain in place.

Mitigation

Mitigation Measure CR-1: Implementation of Protocols for Cultural Monitoring During Ground Disturbance

NAFC shall retain a qualified cultural resource monitor who is approved by the Wiyot Tribe, Bear River Band of the Rohnerville Rancheria, and the Blue Lake Rancheria to monitor ground disturbing activities related to this Project in areas the Tribes deem culturally sensitive. The three Tribal Historic Preservation Officers or their functional equivalent shall be contacted to set up and implement a cultural monitoring contract when a construction schedule has been determined. Advanced coordination with the qualified cultural monitor is required. As landowner, the Humboldt Bay Harbor, Recreation, and Conservation District (landowner) shall be provided with written verification for compliance. NAFC shall adhere to the Standard Operating Procedures for Inadvertent Archaeological Discovery (General), as detailed in the Archaeological and Historical Resource Investigation Report prepared for the Project by Roscoe and Associates (2020).

Mitigation Measure CR-2: Implementation of Inadvertent Discovery Protocols

If cultural or historic-era resources are encountered during construction activities, the contractor on-site shall cease all work in the immediate area and within a 50-foot buffer of the discovery location. A qualified archaeologist, as well as the Tribal Historic Preservation Officers for the Bear River Band Rohnerville Rancheria, Blue Lake Rancheria, and Wiyot Tribe shall be contacted to evaluate the discovery and, in consultation with the applicant and lead agency, develop a treatment plan in any instance where significant impacts cannot be avoided. The Humboldt Bay Harbor, Recreation, and Conservation District (landowner) shall also be notified. In the event of inadvertent discoveries, the Standard Operating Procedures as outlined by Roscoe and Associates (2020) shall be followed. NAFC shall adhere to the Standard Operating Procedures for Inadvertent Archaeological Discovery (General) and Standard Operating Procedures for Documenting Inadvertent Archaeological Discoveries, as detailed in the Archaeological and Historical Resource Investigation Report prepared for the Project by Roscoe and Associates (2020).

Implementation of Mitigation Measure CR-1 and Mitigation Measure CR-2 would reduce potential impacts related to inadvertent discovery of cultural resources to be less than significant.

c) Disturb any human remains, including those interred outside of formal cemeteries? (Less-than-Significant with Mitigation)

While the cultural resource investigation did not determine archaeological resources were likely to be present (Roscoe and Associates 2020), inadvertent discovery of human remains may still occur. In the event human remains are encountered during construction, Mitigation

Measure CR-3 would be implemented to ensure any potential impact would be less than significant.

Mitigation

Mitigation Measure CR-3: Minimize Impacts to Unknown Archaeological Resources or Human Remains if Encountered

If human remains are discovered during Project implementation, all work shall be halted and the Humboldt Bay Harbor, Recreation, and Conservation District (landowner) and tribal representatives shall be contacted immediately. The Humboldt Bay Harbor, Recreation, and Conservation District shall contact the County Coroner immediately and the Coroner would evaluate the find to determine the subsequent course of action, including notification of tribal representatives. In the event of inadvertent discoveries, the Standard Operating Procedures as outlined by Roscoe and Associates (2020) shall be followed, including Standard Operating Procedures for Inadvertent Discovery of Native American Remains and Grave Goods.

Implementation of Mitigation Measure CR-3 would reduce potential impacts related to inadvertent discovery of unknown archaeological resources or human remains to be less than significant.

4.6 Energy

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

Impact Analysis

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

Construction of the Project will involve a variety of earthwork and building practices, involving the use of heavy equipment as discussed in Section 2.2. Construction will require the use of fuels, primarily gas, diesel, and motor oil. Construction emissions were estimated using CalEEMod version 2016.3.2, and are estimated to be approximately 15,517.5 metric tons of carbon dioxide equivalent ($MTCO_2e$) from all construction activities over the six-year construction period. The Project's construction emissions equal 517.25 $MTCO_2e$ per year when annualized over the assumed 30-year lifespan of the Project (Appendix B - CalEEmod Air Quality Modelling Results). Construction equipment will remain staged at the Project Site once mobilized. To the extent possible, excavated soil would be reused on-site which would reduce the need for off-hauling. Soils that are contaminated and/or not structurally sound will be excavated and replaced with appropriate fill material. Excavated material will be either repurposed, reused on-site, or appropriately transported and disposed of at an off-site facility.

Inefficient construction-related operations will also be avoided due to the measures in Mitigation Measure AIR-1 (BMPs to Reduce Air Pollution). Equipment idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes or less (as required by Mitigation Measure AIR-1). Because construction will not encourage activities that will result in the use of large amounts of fuel and energy in a wasteful manner, and with the incorporation of Mitigation Measure AIR-1 which will reduce idling time, impacts related to the inefficient use of construction-related fuels will be less than significant with mitigation.

Operation of the Project will include periodic maintenance of facility buildings/site, the regular arrival and departure of employees and trucks, and the facility's operational energy consumption. Maintenance activities will be performed with hand, power tools, and/or heavy equipment depending on the maintenance activity. The movement of employees and incoming/outgoing trucks will occur consistent with normal functioning of a typical production

facility. Stringent California-specific fuel efficiency standards will all apply to all trucks and light vehicles. Additional vehicle travel-related information can be found in Sections 4.3, 4.8, and 4.17. The estimated normal daily electricity usage is 21.4 MW, a portion of which will be offset by the 3-5 MW rooftop solar installation which will cover approximately 690,000 square feet of facility rooftops. Normal operation of the facility will use exclusively electricity, though regular testing and maintenance of the backup energy system will make use of small amounts of natural gas and diesel fuel as described in Section 2.2.3. In order to reduce energy demands, Buildings 1 and 2 of the facility will be designed to capture as much as possible of the heat generated by the fish, and therefore a network of heat exchangers and heat pumps will be installed and connected to the production modules with subgrade heating/cooling water lines. The operation of the Project will not result in inefficient, wasteful, or unnecessary consumption of fuels or other energy resources. The impact will be less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (Less-than-Significant)

The Project will not conflict with or inhibit the implementation of the State EAP, Senate Bill (SB) 1389, SB 100, AB 1007, or other state regulations that are applicable to the Project because the Project will not inefficiently utilize energy due to incorporation of Mitigation Measure AIR-1, which limits idling time and provides measures to protect air quality, and will use energy sourced from the PG&E grid which is in compliance with the aforementioned plans. The electricity provided by PG&E is subject to California's Renewables Portfolio Standard, which mandates that a proportion of the power comes from renewable sources. Furthermore, the Project will utilize photovoltaic panels and fish-generated waste heat to supplement its energy supply and to reduce energy needs, respectively. In regard to greenhouse gases and energy efficiency, Project facilities will comply with applicable state requirements, such as Title 24 energy efficiency standards and the California Green Building Standards mandatory measures unless exemptions apply, which is further discussed in Section 4.8 – Greenhouse Gas Emissions. The Project will temporarily require the use of construction equipment in order to construct the components of the Project, however these activities will be temporary and will not interfere with the broader energy goals of the state. The majority of the plans aren't directly applicable to the Project or its operations, but rather affect the Project through regulation of vehicle efficiency standards, renewable energy mix with energy providers, etc. For plan requirements that are directly applicable to the Project, the Project complies. The Project will therefore not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, as no component of the Project will require an energy source, beyond the temporary use of construction equipment. A less than significant impact will occur.

An analysis of potential cumulative impacts on energy from implementation of the Project is considered in Section 4.21 – Mandatory Findings of Significance.

4.7 Geology and Soils

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?				✓
ii) Strong seismic ground shaking?			✓	
iii) Seismic related ground failure, including liquefaction?		✓		
iv) Landslides?				✓
b) Result in substantial soil erosion or the loss of topsoil?		✓		
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on, or off, site landslide, lateral spreading, subsidence, liquefaction or collapse?			✓	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			✓	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?			✓	
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		✓		

Impact Analysis

A geotechnical investigation was conducted for the Project (SHN 2020) and was used as a basis for evaluating potential applicable impacts.

Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

a, i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. (No Impact)

The surface trace of the Little Salmon fault is projected to be 3.5 miles south of the Project Site and is the nearest active Holocene age fault designated by the State of California (CGS 2002 cited in SHN 2020). However, the Project Site is not located within an Alquist-Priolo Fault Hazard Zone associated with this or any other active fault. No known active or recently inactive fault crosses the Project Site, and SHN (2020) did not observe field evidence to suggest that a previously unrecognized active fault may be present. SHN (2020) concluded the risk of surface fault rupture at the Project Site is considered negligible. No impact related to fault rupture would result.

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

The Project is situated within a seismically active area close to several seismic sources capable of generating moderate to strong ground motions. Because the Project is located within a seismically active area, the probability that strong ground shaking associated with large magnitude earthquakes would occur during the design life of the Project is high.

The Project Site is in proximity to numerous latest Quaternary faults located in both the onshore and offshore areas, including the Cascadia subduction zone, Gorda plate, and shallow upper plates (e.g., Little Salmon and Mad River fault zones (SHN 2020)). The Mendocino fault zone and San Andreas fault also have the potential to generate strong ground motion at the Project Site (SHN 2020). The Humboldt County coast is a highly active tectonic region that has been subjected to numerous earthquakes of low to moderate strength (magnitude 4 to 5.9) and occasionally to strong (magnitude 6 to 6.9) earthquakes. Seismicity in the region is attributed primarily to the interaction between the Pacific, Gorda, and North American plates (SHN 2020). Project implementation would not increase risk of strong seismic ground shaking above existing conditions.

Under existing conditions, the Project Site is primarily unoccupied and unused, but does have tenants in one structure proposed for the demolition. The Project will increase exposure to strong seismic ground shaking to anticipated employees and ancillary support services that may be present in the event of an earthquake. The Project will be built to California Building Code (CBC) standards, which account for earthquake resiliency. Other existing buildings located on the parcel are occupied with tenants but are located outside the Project boundary; buildings located outside the Project boundary on the parcel would be unaffected by the Project.

Given the Project will not increase the risk of strong seismic ground shaking and will be constructed to meet CBC earthquake resiliency standards, the impact to people and structures from strong seismic ground shaking would be less than significant.

a.iii, a.iv, c, d) Liquefaction, landslides, or otherwise unstable soils? (Less-than-Significant with Mitigation)

Seismically-Induced Liquefaction

Liquefaction is a soil behavior phenomenon in which soil located below the groundwater table temporarily loses strength during and immediately after a seismic event because of strong earthquake ground motions (SHN 2020). Liquefaction occurs as seismic shear stresses propagate through a saturated soil and distort the soil structure, causing loosely packed groups of particles to contract or collapse (SHN 2020). Liquefaction-induced settlement may also result after an earthquake as a result of soil densification (SHN 2020).

SHN (2020) calculated the potential for liquefaction to occur at the Project Site by comparing the cyclic shear stresses induced within the soil profile during an earthquake to the ability of the soils to resist these stresses. Results indicated that the non-cohesive granular soils below the groundwater surface between the depths of about 10 to 25 feet would have a low to moderate likelihood of liquefying during the design earthquake (SHN 2020). Results further indicated up to 3.5 inches of post-liquefaction settlement may occur below the groundwater table following the design earthquake hazard level (SHN 2020). SHN concluded that the general uniformity of the soils encountered and the relative minor differences in settlement potential between each test location could result in seismic settlement up to 3.5 inches, which would likely result in vertical ground surface displacements and partial loss of bearing support (SHN 2020).

Based on the estimated amounts of total and differential settlement, SHN (2020) included geotechnical recommendations to ensure buildings included as part of the Project are properly constructed to avoid future settlement as a result of seismically-induced liquefaction. As an outcome of the geotechnical recommendations, the facility would be designed to withstand predicted liquefaction potential. Soil densification will occur as described elsewhere in this document.

Mitigation

Mitigation Measure GEO-1: Implement Geotechnical Recommendations

As part of the Project design process, NAFC has engaged a California-registered Geotechnical Engineer to conduct a design-level geotechnical study for the Project. NAFC will ensure that the Project is designed to comply with the site-specific recommendations identified in the Project's geotechnical report prepared for the Project by SHN (2020) and any subsequent geotechnical recommendations prepared as the Project's design advances. Geotechnical recommendations require designs in accordance with the seismic and foundation design criteria, as well as site preparation and grading recommendations included in the report. The geotechnical recommendations will be incorporated into the final plans and specifications for the Project and will be implemented during construction.

With the implementation of Mitigation Measure GEO-1, the potential impact that would result from seismically-induced liquefaction would be less than significant

Liquefaction - Lateral Spreading

In addition to settlement, liquefaction resulting in lateral spreading may occur where a steep embankment borders the edge of a bay or other water body, such as Humboldt Bay (SHN

2020). SHN (2020) conducted an analysis of the potential for and magnitude of liquefaction-induced lateral spread based on geotechnical borings located closest to Humboldt Bay. Topographical information indicates that the ground surface at the Project Site is relatively flat from the nearest proposed structure to the shoreline of Humboldt Bay, although the ground surface descends at a moderately steep gradient from the edge of the Project Site toward the intertidal mudflat at the immediate shoreline (SHN 2020). Results indicated the magnitude of lateral spread deformation at the eastern edge of the Project Site was estimated to be less than 0.5 feet (SHN 2020). The estimated horizontal displacements indicate that some lateral movement could occur near the eastern edge of Building 2 during the design earthquake hazard level and induce lateral spreading earth pressures on structural components, such as the piles (SHN 2020).

SHN (2020) included geotechnical recommendations to ensure buildings included as part of the Project are properly constructed to account for potential lateral spreading, and are incorporated into Mitigation Measure GEO-1. With the implementation of Mitigation Measure GEO-1, the potential impact that would result from liquefaction and lateral spreading is judged to be less than significant.

Landslides and Unstable Soils

The Project Site is located on the Samoa Peninsula and is generally flat. The Project Site does not include steep slopes or hillsides and thus does not have the potential for landslides, although the Project Site does have some slope dunes between the development and Vance Avenue. The Project Site is an existing industrial area that includes extensive paving. Through Project implementation, the Project Site will be redeveloped and any exposed (unpaved) soils will be limited to natural habitats excluded from development. Areas excluded to preserve natural habitats have sand fill substrate and are vegetated (GHD 2021c, SHN 2020) and do not include bare or unstable soils, cut slopes, or other embankments that could result in geologic instability. No impact would result.

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

SHN (2020) reported the upper stratum at the Project Site is primarily a sand fill (2-5 feet thick). Older dune deposits were observed beneath the sand fill, extending to a depth of up to 50 feet (SHN 2020).

Construction activities, including grading, soil densification, trenching, and operation of heavy machinery, would disturb soil and, therefore, have the potential to cause erosion. Erosion and sediment control provisions prescribed in the Humboldt County Code and the CBC would be required as part of the Project. Construction BMPS will be implemented as Mitigation Measure GEO-2, to ensure potential water quality impacts are at a less than significant level during and post construction. A construction SWPPP will also be prepared for the Project. Therefore, the potential soil erosion impact from construction would be less than significant with the implementation of Mitigation Measure GEO-2.

Mitigation

Mitigation Measure GEO-2: Construction Best Management Practices

The contractor will implement BMPs during construction, including the following BMPs from the current California Stormwater BMP Handbook for Construction:

EC-1: Scheduling; EC-2: Preservation of Existing Vegetation; NS-2: Dewatering Operations; NS-9: Vehicle Equipment and Fueling; NS-10: Vehicle & Equipment Maintenance; WM-2: Material Use; WM-4: Spill Prevention and Control. Additionally, the following conditions will be required during construction:

- Silt fences will be deployed as needed at onshore construction areas to prevent any sediment from flowing into Humboldt Bay. Required silt fence and erosion control locations and specifications for installation shall be included in the final construction plan set. If the silt fences are not adequately containing sediment, construction activity will cease until remedial measures are implemented that prevents sediment from entering the waters east of the construction area;
- Construction materials and debris will not be placed or stored where it may be allowed to enter into or washed by rainfall into Humboldt Bay;
- Best Management Practices (BMPs) will be implemented to prevent: 1) entry of stormwater runoff into Humboldt Bay during construction, 2) the entrainment of excavated contaminated materials leaving the site, and 3) the entry of polluted stormwater runoff into coastal waters during the transportation and storage of excavated materials. These BMPS will be included in the Stormwater Pollution Prevention Program (SWPPP), which is required for the Project (see Section 4-10 – Hydrology and Water Quality);
- Non-essential work vehicles and equipment will be parked at least 100 feet away from the shoreline;
- Sufficient erosion control supplies will be maintained on-site at all times, available for prompt use in areas susceptible to erosion during rain events;
- Disturbance of existing vegetation will be minimized to only that necessary to complete the work;
- The contractor, including sub-contractors, shall be required to provide employee training in spill prevention prior to construction. The contractor shall also be required to provide equipment to contain oil and/or other hazardous materials spills. Spill prevention and response requirements shall be included in the final construction plan set;
- Dewatering operations will be conducted where needed from the work location and stored or disposed of appropriately. Any groundwater encountered during demolition and construction that requires removal would be pumped into appropriate containers, such as Baker tanks for characterization. Excavation depths for construction are not anticipated to extend to groundwater and the use of dewatering wells for the Project is not planned (SHN 2021b). Water sourced from dewatering would not be discharged to on-site one-parameter wetlands or Humboldt Bay to cause polluted runoff; groundwater recharge would continue to occur via the dewatering wells;
- Vehicle and equipment maintenance should be performed off-site whenever practical and shall not occur adjacent to Humboldt Bay or sensitive habitats;
- As required in the SWPPP, contractor shall ensure that the site is prepared with BMPs prior to the onset of any storm predicted to receive 0.5 inches or more of rain over 24 hours;

- All erosion and sediment control measures shall be maintained in accordance to their respective BMP fact sheet until disturbed areas are stabilized. Erosion and sediment control measures shall be explicitly included in the final construction plan set; and
- This plan may not cover all the situations that arise during construction due to unanticipated field conditions. Variations may be made to the plan in the field subject to the approval of or at the direction of NAFC Project Manager or Construction Manager.

Dune restoration as required in the RMP (see Section 4.4) could result in minor soil disturbance to remove non-native plant species and revegetate with appropriate native species. Revegetation would primarily occur via broadcast seeding, which would minimize any potential soil disturbance. Historic restoration of the dunes in other locations on the Samoa Peninsula has not resulted in dune destabilization or substantial soil erosion. The potential soil erosion impact from dune restoration and implementation of the RMP would be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (Less-than-Significant)

The Project Site includes an existing leach field managed by the Harbor District. The leach field remains from former industrial use and includes a 10,000-gallon septic tank. The leach field measures approximately 170 by 180 feet and is connected to the septic tank via 34 leach lines (Integral Consulting 2014). The leach field was designed and approved to handle a flow of 14,700 gpd of domestic wastewater generated by the employees of the pulp mill while in operation. The leach field is currently used by other industrial businesses leasing adjoining facilities from the Harbor District.

Following construction in the short-term, the existing leach field would be used to support the Project's sanitary sewer needs during Phase 1. The Project's sanitary sewer would not discharge through outfall into the Pacific Ocean. Use of the leach field would be discontinued once construction begins on the Phase 2 production modules, as the second production module building is proposed to be located over the existing leach field. The leach field will be abandoned in place pursuant to California Health and Safety Code Section 115700(a) and Humboldt County Code Sections 611-6 and 612-2. Once the Phase 2 production modules are under construction, the Project Site structures would be connected to the Peninsula Community Services District (PCSD) sewer line that would be constructed west of the Project Site.

As existing sanitary sewer infrastructure would be sufficient for Phase 1 Project needs and the future PCSD wastewater treatment facility to be located near the Project Site would meet Phase 2 needs, no new leach field, septic tanks, or other wastewater disposal systems would be needed. Therefore, a less than significant impact would occur.

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

Paleontological resources are the remains or traces of prehistoric animals and plants. Paleontological resources, which include fossil remains and geologic sites with fossil-bearing strata, are non-renewable and scarce and are a sensitive resource afforded

protection under environmental legislation in California. Under California Public Resources Code (PRC) § 5097.5, unauthorized disturbance or removal of a fossil locality or remains on public land is a misdemeanor. State law also requires reasonable mitigation of adverse environmental impacts that result from development of public land and affect paleontological resources (PRC § 30244).

It is unlikely that Project construction would impact potentially significant paleontological resources because most of the Project occurs in relatively newly deposited alluvium and was graded in the mid-1960s. However, the possibility of encountering a paleontological resource during construction cannot be completely discounted; therefore, the impact related to the potential disturbance or damage of previously undiscovered paleontological resources, if present, is considered potentially significant. To reduce the impact to a less-than-significant level, Mitigation Measure GEO-3 provides protocol to be followed in the event of inadvertent discovery of previously undiscovered paleontological resources.

Mitigation

Mitigation Measure GEO-3: Inadvertent Discovery of Paleontological Resources

In the event that fossils are encountered during construction (i.e., bones, teeth, or unusually abundant and well-preserved invertebrates or plants), construction activities shall be diverted away from the discovery within 50 feet of the find, and a professional palaeontologist shall be notified to document the discovery as needed, to evaluate the potential resource, and to assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the palaeontologist may record the find and allow work to continue, or recommend salvage and recovery of the material, if it is determined that the find cannot be avoided. The palaeontologist shall make recommendations for any necessary treatment that is consistent with currently accepted scientific practices. Any fossils collected from the area shall then be deposited in an accredited and permanent scientific institution where they would be properly curated and preserved.

Implementation of Mitigation Measure GEO-3 would reduce this impact to a less-than-significant level for both construction and operation because a plan to address discovery of unanticipated paleontological resources and to preserve and/or record those resources consistent with appropriate laws and requirements would be implemented.

4.8 Greenhouse Gas Emissions

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

This Section evaluates potential impacts related to greenhouse gas (GHG) emissions resulting from construction and operation of the Project against significance thresholds derived from applicable local, state, or federal policies, or from Appendix G of the CEQA Guidelines.

The NCUAQMD has not adopted regulations regarding the evaluation of greenhouse gas (GHG) emissions in a CEQA document and has not established CEQA significance criteria to determine the significance of impacts with regard to GHGs.

The County of Humboldt, as Lead Agency for the Project, has elected to apply the CARB's industrial Cap-and-Trade threshold of 25,000 $MTCO_2e$ per year to determine the Project's impact for generation of GHGs. On February 18, 2010, the Council on Environmental Quality (CEQ) provided a draft guidance memorandum for public consideration and comment on the ways in which federal agencies can improve their consideration of the effects of greenhouse gas emissions and climate change in evaluations of proposals for federal actions under the National Environmental Policy Act (NEPA) (CEQ 2010). The CEQ's 2010 draft guidance proposed to advise federal agencies to consider, in scoping their NEPA analyses, whether analysis of the direct and indirect greenhouse gas emissions from their proposed actions may provide meaningful information to decision makers and the public. Specifically, if a proposed action would be reasonably anticipated to cause direct emissions of 25,000$MTCO_2e$ emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public. The CEQ updated that draft in 2014 and provided a final guidance on August 2, 2016 (CEQ 2016).

Impact Analysis

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

NCUAQMD has not adopted regulations regarding the evaluation of GHG emissions in a CEQA document and has not established CEQA significance criteria to determine the significance of impacts with regard to GHGs (J. Davis. pers. comm. 2019). The NCUAQMD recommends considering the GHG emission CEQA standards from the BAAQMD (J. Davis

pers. comm. 2019). For project construction, BAAQMD does not have quantitative GHG emission thresholds (BAAQMD 2017).

Therefore, due to a lack of local thresholds, the County of Humboldt, as Lead Agency for the Project, has elected to apply two methods for assessing the Project's potential GHG emissions impact:

1. Compare the Project's GHG emissions against a bright-line numeric threshold; and
2. Rely on a qualitative analysis of the Project's consistency with applicable plans and policies for reduction of GHG emissions.

Accordingly, the two methods elected by the County of Humboldt, and associated threshold of significance, are:

Quantitative: 25,000 MTCO2e per year.

The CARB's industrial Cap-and-Trade entry threshold of 25,000 $MTCO_2e$ per year is used to determine the Project's impact for generation of GHGs. This threshold is also consistent with the CEQ's 2010 draft guidance and EPA's Greenhouse Gas Reporting Program reporting threshold for 'large' industrial sources. The Cap-and-Trade Program is a key element of California's strategy to reduce GHG emissions, by requiring large industrial sources (emissions greater than 25,000 $MTCO_2e$ per year) to reduce GHG emissions with the allowable emissions declining over time. The Program applies to emissions that cover approximately 80 percent of the State's GHG emissions. In order to assess the potential impact of construction-generated emissions, the construction GHG emissions are annualized over an assumed 30-year project lifespan and added to operational emissions.

Qualitative: Consistency with an adopted Climate Action Plan that supports state-wide GHG emission reduction goals.

Humboldt County is working on preparing a multi-jurisdictional Climate Action Plan with all jurisdictions within the County; however, the County does not have an adopted Climate Action Plan. The County General Plan, adopted in 2017, contains an Air Quality Element with several policies that reduce GHG emissions in the County, including requirements for the County to prepare the Climate Action Plan. However, a qualified Climate Action Plan with reduction targets for years 2030 and beyond was selected to assess the project's plan consistency. GHG emissions are inherently global. The environmental effect of such emissions—climate change—is a global impact and is not limited to the region where those emissions occur. Therefore, where there is no qualified Climate Action Plan in the immediate jurisdiction where a Project is being constructed, it is appropriate to utilize a Climate Action Plan from another jurisdiction because the measures required to achieve statewide GHG reductions will be the same across jurisdictions, and the impacts of those reductions are global.

For both the quantitative and qualitative assessment, a large driver of the Project's emissions and consistency analysis is related to energy efficiency. The Project is anticipated to require approximately 160,491 total megawatt hours per year for non-Title 24 uses. Specifically, the majority of energy consumption would be for the treatment and disinfection (UV sterilization) of wastewater prior to discharge into the Pacific Ocean. The Project

includes onsite solar facilities. The proposed solar facilities would generate approximately 33 percent of Project's energy. Additionally, the project would include a network of heat exchangers and heat pumps to capture fish-generated waste heat to supplement its energy supply and to reduce energy needs. As detailed in Section 4.6, Energy, project operations will not result in inefficient, wasteful, or unnecessary consumption of fuels or other energy resources. Therefore, the Project will not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, as no component of the Project will require an energy source, beyond the temporary use of construction equipment.

Quantitative Analysis

In order to assess the potential impact of construction-generated emissions, the construction GHG emissions were annualized over an assumed 30-year project lifespan and added to operational emissions. Based on CalEEMod modeling (attached as Appendix A), Project construction activities would result in a temporary increase in GHG emissions, including exhaust emissions from on-road trucks, worker commute vehicles, and off-road heavy-duty equipment. Construction would require clearing, earthmoving, and delivery equipment, as used for similar projects, and which have been accounted for in the State's emission inventory and reduction strategy for both on- and off-road vehicles. Construction emissions were estimated using CalEEMod version 2016.3.2 and were estimated to be approximately 15,517.5 $MTCO_2e$ from all construction activities. The Project's construction emissions equal 517.25 $MTCO_2e$ per year when annualized over the assumed 30-year lifespan of the Project. Emissions during construction would not be a considerable contribution to the cumulative greenhouse gas impact, given that construction would be temporary and would not require a large fleet of earthmoving equipment or soil off-hauling beyond the normal equipment and activities related to such projects. Therefore, the Project's construction-related emissions would be less than significant.

Project operational emissions were also estimated using CalEEMod version 2016.3.2. The project will result in an increase in operational trips (employee, hauling trips). Project-specific energy consumption, on-site energy production, water use, and trip parameters were utilized in the Project analysis. Table 4-6 summarizes Project construction and operational-related GHG emissions model results.

Emissions during construction would not be a considerable contribution to the cumulative greenhouse gas impact, given that construction would be temporary, of short duration, and would not require a large fleet of earthmoving equipment and soil off-hauling beyond the normal equipment and activities related to such utility or infrastructure projects. Additionally, the Project's operational emissions will not exceed the identified emission thresholds.

As shown in the table, the majority of emissions would be associated with energy consumption. As stated previously, the project design requires energy consumption to clean wastewater prior to discharge; the Project's energy demand is directly related to environmental measures to clean water. The Project is designed to use energy efficiently, includes onsite solar facilities for approximately 1/3 of its energy use, and would capture and reuse fish-generated heat to reduce its energy needs. Grid energy would come from PG&E, which has met and exceeded the State's Renewable Portfolio Goal of providing 33% of energy from specified eligible-renewable resources, and is required to achieve a 60% renewables goal by 2030, and be 100% carbon-free by 2045. The emissions analysis used the existing carbon intensity factors for PG&E and, therefore, is overly conservative.

Furthermore, the proposed Project is designed to deliver product to local (west coast) markets, thereby lessening the need for these markets to import seafood from other long-distances. Farmed seafood is imported to the west coast and United States from Europe and Asia; a local source will reduce GHG emissions from truck and other transportation traffic. As such, the Project will not result in substantial long-term operational emissions of GHGs. Therefore, the Project will generate a less than significant impact.

Table 4-5 Operational Greenhouse Gas Pollutant Emissions (2026)

Parameter	Emissions (metric tons per year)
Area	0.01
Energy	15,292.74
Off Road	35.37
Waste	361.69
Water	669.34
Mobile – Worker	287.10
Mobile – Hauling (NCUAQMD Area)	1,204.72
Mobile – Hauling (Remaining California)	1,731.03
Annualized Construction	517.25
Total Operation	20,099.25
Threshold of Significance	*25,000*
Significant Impact?	*No*

Qualitative Analysis

The Project is evaluated for consistency with an adopted Climate Action Plan (CAP) for a rural northern California County with a large agricultural sector, similar to Humboldt County, which contains emission reduction goals for years 2030, 2040, and 2050 to achieve the thresholds set by the Governor's Executive Order S-3-05. The Yolo County CAP demonstrates an ability to achieve a 27 percent reduction below 1990 emissions levels by 2030. The Project's consistency with the Yolo County CAP's measures is assessed in Table 4-6.

Table 4-6 Consistency Analysis Between Project and Qualified Climate Action Plan

Qualified Climate Action Plan Measures[1]	Consistency/Applicability Determination
Energy Measure E-1: **Pursue a community choice aggregation program** The CAP assumes that the County will set the following 2020 targets for the CCA: • 25% of consumers use PG&E's portfolio (0% by 2030) • 50% of consumers purchase a "light green" portfolio comprised of 50% renewable sources (75% by 2030) • 25% of consumers purchase a "deep green" portfolio comprised of 100% renewable sources (assumed to include a 10% cost premium) (25% by 2030)	**Consistent**. Grid energy would come from PG&E, which has met and exceeded the State's Renewable Portfolio Goal of providing 33% of energy from specified eligible-renewable resources, and is required to achieve a 60% renewables goal by 2030, and be 100% carbon-free by 2045.
Energy Measure E-4: **Increase on-site renewable energy generation to reduce demand for grid energy** On-site renewable energy generation is an effective way to reduce demand for grid energy. Other technologies should also be pursued and encouraged, including but not limited to heat capture, methane capture, and anaerobic waste digesters. Facilities and operations that can demonstrate equivalent reductions to solar systems using alternative on-site renewable energy generation technologies are in compliance with this measure.	**Consistent**. The Project is designed to use energy efficiently, includes onsite solar facilities for approximately 1/3 of its energy use, and would capture and reuse fish-generated heat to reduce its energy needs.

[1] The Yolo County CAP Agricultural Measures (Measures A-1 through A-6) are not applicable to the Project, as the project would not be agricultural and would not include the activities or emission sources targeted by the Agricultural Measures. CAP Transportation Measure T-1 does not apply to the Project, because the project is an individual industrial project and not located withing any of the specific land use development areas identified by the measure. CAP Energy Measures E-2, E-3, E-5 applies to the County, not individual projects. CAP Energy Measure E-6 applies to existing facilities, the project would be a new facility. Finally, CAP Solid Waste and Wastewater Measure WR-1 does not apply to the project, as the project would not generate methane.

Qualified Climate Action Plan Measures[1]	Consistency/Applicability Determination
Energy Measure E-7: **Promote weather-based irrigation systems and water efficient turf management** Designing landscapes to favor low-water demand plants adapted to the local climate is one of the most cost-effective ways to reduce potable water use. To complement plant selection, installing weather-based irrigation controllers that adjust irrigation in response to weather and soil moisture conditions and employing more water-efficient turf management practices can further reduce water use.	**Consistent**. The Project includes native landscaping, as detailed in Section 2.7, Landscaping Design. Extant dune mat and coastal brambles on-site will be enhanced through removal of invasive species and augmented with additional plantings to fill those void spaces and will be part of agency-required dune mat/Gilia on-site mitigation. Stormwater management basins will include plantings that mimic seasonal wetlands and plant communities also found in dune environments. Do to the mild coastal climate, any landscape irrigation would be primarily limited to establishing plants.

Source of Yolo County CAP Measures: Yolo County, 2011

The project would be consistent with the adopted qualified Climate Action Plan, as shown in the table above, and a less than significant impact would occur.

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

In addition to the analysis above, the Project is evaluated for consistency with the CARB *2017 Climate Change Scoping Plan*. The 2017 Scoping Plan provides California's climate policy portfolio and recommended strategies to put the state on a path to achieve the 2030 target. The scenario includes ongoing and statutorily required programs, continuing the Cap-and-Trade Program, and high-level objectives and goals to reduce GHGs across multiple economic sectors. Existing programs, also known as "known commitments," identified by the 2017 Scoping Plan include: SB 350, the Low Carbon Fuel Standard (LCFS), CARB's Mobile Source Strategy, Senate Bill 1383 for short-lived climate pollutants, and California's Sustainable Freight Action Plan. The high-level objective and goal recommendations cover the energy, transportation, industry, water, waste management, agriculture, and natural and working lands, and are to be implemented by a variety of state agencies.

Project construction would cause a temporary increase in GHGs; however, as discussed above, Project emissions will not exceed the identified emission thresholds. Project construction is analyzed for consistency with the *2017 Climate Change Scoping Plan* in Table 4-7.

Table 4-7 Consistency Analysis Between Project and Climate Change Scoping Plan

Scoping Plan Reduction Measures	Consistency/Applicability Determination
California Cap-and-Trade Program Linked to Western Climate Initiative. Implement a broad-based California Cap-and-Trade program to provide a firm limit on emissions. Link the California cap-and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater environmental and economic benefits for California. Ensure California's program meets all applicable AB 32 requirements for market-based mechanisms.	**Consistent**. This is a statewide measure that cannot be implemented by the Project or lead agency. PG&E obtains 39 percent of its power supply from renewable sources such as solar, wind, and geothermal, in conformance with various regulations (PG&E 2020). The State's Renewable Portfolio goals require energy producers to achieve a 60% renewables goal by 2030, and 100% carbon-free by 2045. The Project will utilize PG&E power.
California Light-Duty Vehicle Greenhouse Gas Standards. Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	**Consistent**. This is a statewide measure that cannot be implemented by the Project or lead agency. However, the standards would be applicable to the light-duty vehicles that will access the Project Site.
Energy Efficiency. Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.	**Consistent**. This is a measure for the state to increase its energy efficiency standards in new buildings. The Project would be required to build to the latest standards and will increase its energy efficiency through compliance.
Renewable Portfolio Standard. Achieve 50 percent renewable energy mix statewide by 2030. Renewable energy sources include (but are not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas	**Consistent.** This is a statewide measure that cannot be implemented by the Project or lead agency. PG&E obtains 39 percent of its power supply from renewable sources such as solar and geothermal, consistent with various regulations. The Project would utilize PG&E as a utility provider, which meets this standard. Additionally, the Project will include on-site solar power generation.
Low Carbon Fuel Standard. Develop and adopt the Low Carbon Fuel Standard.	**Consistent**. This is a statewide measure that cannot be implemented by the Project or lead agency. The standard would be applicable to the fuel used by vehicles that will access the Project Site.

Scoping Plan Reduction Measures	Consistency/Applicability Determination
Regional Transportation-Related Greenhouse Gas Targets. Develop regional greenhouse gas emissions reduction targets for passenger vehicles. This measure refers to SB 375.	**Not applicable**. This is a statewide measure calling for the development of GHG emission reduction targets.
Vehicle Efficiency Measures. Implement light-duty vehicle efficiency measures.	**Not applicable**. This is a statewide measure that cannot be implemented by the Project or lead agency.
Goods Movement. Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.	**Not applicable**. The Project does not propose any changes to modes of transportation of goods.
Million Solar Roofs Program. Install 3,000 MW of solar-electric capacity under California's existing solar programs.	**Consistent**. This measure is intended to increase solar power throughout California, which is being done by various utility companies and solar programs. The Project includes on-site solar power generation.
Medium/Heavy-Duty Vehicles. Adopt medium and heavy-duty vehicle efficiency measures.	**Consistent**. This is a statewide measure that cannot be implemented by the Project or lead agency. However, the standards would be applicable to the medium and heavy-duty vehicles that would access the Project Site.
Industrial Emissions. Require assessment of large industrial sources to determine whether individual sources within a facility can cost- effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries.	**Not applicable**. This measure will apply to the direct GHG emissions at major industrial facilities. The Project size and estimated generation of greenhouse gases are less than the threshold for large or 'major' industrial sources.
High Speed Rail. Support implementation of a high-speed rail system.	**Not applicable**. This is a statewide measure that cannot be implemented by the Project or lead agency. High speed rail systems are not part of this Project.

Scoping Plan Reduction Measures	Consistency/Applicability Determination
Green Building Strategy. Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	**Consistent**. The Project would comply with the California Energy Code and thus include the required energy efficiency features.
High Global Warming Potential Gases. Adopt measures to reduce high global warming potential gases.	**Consistent**. This measure is applicable to the high global warming potential gases such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF6) found in air conditioning and commercial refrigerators. The Project's air conditioning system would utilize equipment that complies with this measure.
Recycling and Waste. Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.	**Consistent**. The Project does not include a landfill. The project would reduce waste with implementation of state mandated recycling and reuse mandates.
Sustainable Forests. Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation.	**Not Applicable**. The Project would not include tree removal or areas for reforestation.
Water. Continue efficiency programs and use cleaner energy sources to move and treat water.	**Consistent**. This is a measure for State and local agencies. However, the Project would adhere to California Green Building Standards Code regulation and would retain the runoff sourced from the 95th percentile of rainfall which would replenish the groundwater aquifer.
Agriculture. In the near-term, encourage investment in manure digesters and at the five- year Scoping Plan update determine if the program should be made mandatory by 2020.	**Not applicable**. The Project does not include agricultural production.

Source of Scoping Plan Reduction Measures: CARB 2008, CARB 2017

As Project emissions will not exceed the identified emission thresholds and the Project would be consistent with the *2017 Climate Change Scoping Plan*, as shown in the table above, a less than significant impact would occur.

4.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			✓	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				✓
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?		✓		
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project Area?				✓
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				✓
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			✓	

Impact Analysis

Impact analysis in this section relies in part on the Interim Measures Work Plan developed for the Project, which addresses issues related to potential soil and groundwater hazards as they relate to Project construction (SHN 2021b).

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (Less-than-Significant)

Construction of the Project would include the transport and use of common hazardous materials inherent to the construction process, including petroleum products for construction equipment and vehicles, paints, concrete curing compounds, and solvents for construction of Project improvements. These materials are commonly used during construction, are not acutely hazardous, and would be used in relatively small quantities.

Construction may result in the requirement for off-site transport of contaminated soil and/or groundwater to an appropriate waste disposal facility. The California Department of Transportation (Caltrans) and the California Highway Patrol (CHP) regulate the transportation of hazardous materials and wastes, including container types and packaging requirements, as well as licensing and training for truck operators, chemical handlers, and hazardous waste haulers. The California Division of Occupational Safety and Health (Cal-OSHA) also enforces hazard communication program regulations which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees.

Project construction would be required to implement stormwater best management practices (BMPs) during construction in accordance with the State Water Resources Control Board (SWRCB) General Construction Stormwater Permit. Best management practices addressing materials management would be required, including proper material delivery and storage, spill prevention and control, and management of concrete and other wastes.

Because NAFC and its contractors would be required to comply with existing and future hazardous materials laws and regulations and applicable best management practices addressing the transport, storage, use, and disposal of hazardous materials, the potential to create a significant hazard to the public or the environment during demolition and construction of the Project would be less than significant.

Following construction, operation of the Project would require use of chemicals and other hazardous materials for on-site wastewater treatment, fish processing, and aquaculture operations. A specific Spill, Prevention, Control, and Countermeasure (SPCC) plan would be developed and implemented for the Project operations, in addition to inventory logging, storage, and containment inspections. Delivery trucks to and from the facility also present the potential for accidental release of petroleum, diesel, and related hazardous materials. Operational impacts would otherwise not occur. In the event of an accidental spill of hazardous materials, the potential impact would be less than significant with the implementation of the specific SPCC plan and preventative measures previously discussed.

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

The Project would utilize heavy machinery to perform construction-related tasks including demolition, grading, building construction, excavation, ground densification, and transportation of materials. There is always the possibility when equipment is operating that an accident could occur and fuel could be released onto the soil. Equipment on-site during construction would be required to have emergency spill cleanup kits immediately accessible in the case of any fuel or oil spills. Equipment would not be refueled near the one-parameter wetlands nor Humboldt Bay. If equipment must be washed, it would be washed off-site at an appropriate facility. Adherence to Mitigation Measure GEO-2, HWQ-1 (See Section 4.9), and HAZ 1 (see Section (d) below), which include Construction BMPs, implementation of a SWPPP, and implementation of recommendations from the Interim Measures Work Plan, would further negate the potential for accidental releases of hazardous materials during construction. As discussed in Section 4.3 – Air Quality, the Project Site is known to contain asbestos, universal waste (UW), and lead based paint. Demolition activities have the potential to result in the accidental release of asbestos-containing materials (ACMs) and lead into the atmosphere. As such, demolition activities may potentially result in significant impacts. With adherence to Mitigation Measure AIR-2, the potential impact from asbestos during demolition would be less the significant. With adherence to the recommendations identified in the Hazardous Material Survey Report prepared by GHD, the potential construction-related impact would be less than significant.

Operationally, back-up power generators would be elevated above the modeled tsunami elevation (as determined by Martin and Chock 2020) and would require two new 25,000 gallon underground storage tanks. Installation of the new USTs would adhere to required specifications and procedures as regulated by the North Coast Regional Water Quality Control Board. Implementation of the SPCC plan would further avoid operational hazard-related accidents. The potential operational impact would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (No Impact)

There are no existing or proposed schools within one-quarter mile of the Project Site. The nearest school, Peninsula Union, is located approximately 1.25 miles away in the town of Samoa. No impact would result.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (Less-than-Significant with Mitigation)

The Project Site is located on a former pulp mill site that remains an active Brownfield site (Regional Water Quality Control Board case no. 1NHU892), which includes Geotracker Field Points as shown in the EnviroStar and Geotracker online databases. The Project is located 1,000 feet east of the Samoa Solid Waste Disposal Site (SWDS).

This Project Site is a Brownfield site that has received funding grants from the U.S. Environmental Protection Agency (EPA) for cleanup and assessment activities. Numerous investigations of soil, groundwater, soil gas, and construction materials have been

completed pertaining to historic contamination, starting from the late 1990s. The North Coast Regional Water Quality Control Board (NCRWQCB) is the lead agency for the investigation and cleanup of environmental impacts associated from former pulp mill operations and oversees the current groundwater monitoring program in place for the site (SHN 2021b). Documents related to site work and regulatory correspondence are publicly available on the California State Water Resource Control Board (SWRCB) Geotracker website.

Remediation activities commenced in 1994 and have continued as recently as 2019. Past remediation activities were implemented by former Project Site owners, such as Louisiana Pacific Corporation and the Harbor District.

Contaminants of Potential Concern (COPC) identified in site soils were summarized in the Interim Measures Work Plan (SHN 2021b) and are summarized below:

- Primary COPCs remaining at the Project Site are chlorinated hydrocarbons, petroleum hydrocarbons and pH (>8.5 pH units). Planned construction would not extend to areas where soils are impacted by chlorinated hydrocarbons (SHN 2021b). The area of concern for pH is approximately located in the center of the Project Site and would include portions of Buildings 3 and 4.
- Remaining soil impacted by petroleum hydrocarbons was not determined to be impacting groundwater. Dioxin detections in soils are at levels below residential screening levels (SHN 2021b). Additionally, concentrations of metals, polychlorinated biphenyls (PCBs), and organochlorine pesticides (OCPs) in soil samples collected are not elevated based on review of historical data and comparison to background values for the area (SHN 2021b).
- Arsenic is the only metal at the site that was detected at a concentration above the residential soil Environmental Screening Level (ESL) of 0.11 mg/kg (SHN 2021b). However, the concentrations observed for arsenic in site soil is within the probable background range for this area of 5.6 mg/kg (Kearney 1996 cited in SHN 2021b). Levels of lead, cadmium and copper in site soil additionally appear to be in the background range for natural soils in this area (SHN 2021b).

COPCs in groundwater include chlorinated hydrocarbons (chlorinated ethanes and ethenes), dissolved arsenic (As), dissolved chromium (Cr), and dissolved manganese (Mn). Additional parameters of concern include dioxins, pH, color impact from black liquor release, total dissolved solids (TDS), dissolved nickel (Ni), and dissolved chromium VI (Cr VI) (SHN 2021b). Petroleum hydrocarbons have generally been nondetectable or below the water quality objectives (WQOs) in groundwater samples from existing monitoring wells at the Project Site, and are, therefore, not considered COPC of significance (SHN 2021b).

To ensure remaining COPCs in soil and groundwater would not detrimentally impact human health or the environment during construction, including demolition, soil excavation, and dewatering, and full compliance with cleanup requirements at the Project Site, interim measures have been developed by SHN (2020b) and are incorporated into Mitigation Measure HAZ-1 below. Interim measures included in the plan include documentation of modifications to the existing Monitoring and Reporting Program administered by the NCRWQCB, compliance with the SWPPP program, implement a Sampling and Analysis Plan requiring approval by the NCRWQCB, preparation of a Health and Safety Plan, and a Soil Gas Monitoring Program evaluation as it pertains to the Samoa Solid Waste Disposal Site located west of the Project Site. Interim measures also include recommendations for structure demolition, excavation of soils, dewatering, soil testing, field screening, laboratory

testing, quality assurance/quality control, and reporting that will be implemented as part of the Project. These interim measures are included as Mitigation Measure HAZ-1 and would be implemented as part of the Project to ensure historic soil and groundwater contamination would not result in a significant impact to the environment during construction.

Operationally, soil and groundwater disturbance would not occur. The Project's stormwater system would infiltration stormwater away from any sources of remaining COPCs. Additionally, any remaining COPCs at the Project Site would be below applicable regulatory screening thresholds, ensuring any potential risk of operational exposure would not occur. The Sampling and Analysis Plan required under Mitigation Measure HAZ-1 would include an assessment of final in-pace conditions, which would specify any monitoring that may remain warranted to further assure operational exposure would not occur.

Mitigation

Mitigation Measure HAZ-1: Implement Recommendations of Interim Measures Work Plan

To address historic soil and groundwater contaminants remaining at the Project Site from historic use, the Project will implement recommendations included in the Interim Measures Work Plan developed by SHN (2020b). Interim measures included in the plan include documentation of modifications to the existing Monitoring and Reporting Program administered by the North Coast Regional Water Quality Control Board (NCRWQCB), compliance with the SWPPP program, development of a Sampling and Analysis Plan approved by the NCRWQCB, and preparation of a Health and Safety Plan, and a Soil Gas Monitoring Program evaluation as it pertains to the Samoa Solid Waste Disposal Site located west of the Project Site. Interim measures also include recommendations for structure demolition, excavation of soils, dewatering, soil testing, field screening, laboratory testing, quality assurance/quality control, and reporting that will be implemented by the Project.

With the implementation of Mitigation Measure HAZ-1, the resulting impact, both to construction and operations, would be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project Area? (No Impact)

Samoa Field Airport is located approximately 1.5 miles from the Project Site (AirNav 2020). The unattended airstrip is publicly owned by the City of Eureka. The airstrip is infrequently used by small craft airplanes. Ten aircraft are based on the field (AirNav 2020). The Project Site is not located in a designated Airport Land Use Compatibility Zone as identified by the County's Airport Land Use Compatibility Plan (ALUCP). However, it is located within Airport Protected Airspace (CC 333/FAR 77), specifically within the conical sphere. The Project Site has also been identified within Review Area 2 of the 2020 Draft ALUCP, which represents the area in which airspace protection and overflight notification policies are applicable. However, the ALUCP update has not yet been adopted. Noise from these infrequent small craft airplanes would not affect workers at the Project Site, or vice versa. No impact would result.

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

The Project would not conflict with the Humboldt County Operational Area Hazard Mitigation Plan or the Humboldt County Emergency Operations Plan. The Project would not interfere with the established tsunami evacuation route and would provide an on-site tsunami shelter area for the workforce, as well as personnel of adjacent businesses, in the event of a tsunami. An area within the first phase of the Project will be designed as the Tsunami Vertical Evacuation Refuge Structure (TVERS). In the event of a large seismic event, all facility staff would move to the designated Tsunami TVERS and wait for an all clear to be issued by County officials. Per American Society of Civil Engineers (ASCE) 7-16, TVERS buildings are to be designed in accordance with ASCE 7 Section 6.14 to achieve tsunami resilience and reliability for occupancy. The entire facility will be designed to meet all applicable tsunami design standards including the effects of sea level rise and potential land subsidence in a seismic event. In excess of the standard design requirements, the TVERS area and fish containment infrastructure will utilize the Maximum Considered Tsunami (MCT) with a 2% probability of being exceeded in a 50-year period, the equivalent to a return period of approximately 2,500 years (Martin & Chock 2020) to ensure the safety of staff and ensure fish containment. The TVERS area will be located not less than the greater of 10 feet or one-story height above 1.3 times the MCT inundation elevation in the most appropriate structure. Appropriate emergency supplies will be maintained for peak occupancy in the TVERS.

Currently there are not any occupied structures in the area of the RMT II facility that would meet the design requirements ASCE 7 Section 6.14 for a TVERS. Due to a lack of TVERS areas on the peninsula and the limited time to evacuate the tsunami hazard zone following an event, the TVERS area would be open to anyone in the area following a large seismic event or tsunami warning, thus decreasing the risk to human life in the area. No impact would result.

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

As discussed in Section 4.20 – Wildfire, a portion of the Project Site is classified as having a “Moderate” fire hazard severity, which is the lowest category of fire hazard severity; the balance of the Project Site has no fire hazard ranking categorization (Humboldt County 2020). Please see Section 4.20 (d) for impact analysis related to the exposure of people or structures to loss, injury, or death involving wildland fires. In addition, dune restoration as required in the RMP (see Section 4.4.) would result in removal of European beach grass and other biomass for mitigation purposes, reducing the risk of grassland dune fires in restored dune environments. As concluded in Section 4.20 (d), any potential impact would be less than significant.

4.10 Hydrology and Water Quality

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

Impact Analysis

Impact analysis in this section considers the technical documents prepared in support of the Project as listed in the project description.

Water quality impact analysis in the Numeric Modeling Report (GHD 2021b, Appendix E) assumed the maximum potential volume of needed fish food, to conservatively assess a worst-case effluent condition.

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

The Project Site is along the North Spit of the Humboldt Bay, and situated directly east of the Pacific Ocean. Flowing waters (streams, rivers, or natural drainages) are not located on the Project Site. The Project Site does include one-parameter coastal willow wetlands, which would be avoided and protected.

Once operational, pre-treated effluent would be discharged through the existing RMT II ocean outfall into the Pacific Ocean up to 1.5 miles offshore. The dilution of the discharged pre-treated effluent with respect to water quality parameters established in both the Ocean Plan and the Thermal Plan was evaluated and determined to be compliant with all applicable regulations and water quality thresholds (GHD 2021b/Appendix E), as discussed below under operational impact analysis.

Construction

Project construction would occur over two phases and therefore would require installation and monitoring of temporary erosion and sediment control BMPs during construction and throughout the entire construction duration to protect receiving waters from sediment or other construction debris. To ensure any potential construction-related impacts to water quality are less than significant, the Project would also be required to obtain a General Construction Stormwater Discharge SWPPP as detailed in Mitigation Measure HWQ-1. Mitigation Measure HWQ-1 requires measures to limit the potential for water quality impacts related to construction. Additional BMPs to which the Project would adhere are the BMPs included in Mitigation Measure GEO-2 and SWPPP requirements in Mitigation Measure HWQ-1 would minimize and avoid water quality impacts to Humboldt Bay from construction-generated erosion and stormwater by establishing erosion control measures during construction (e.g. silt fences), minimization of vegetation removal, and avoidance of work during heavy rainfall. In addition, Mitigation Measure GEO-2 and HWQ-1 would also protect against accidental spill of hazardous materials during refueling and maintenance of construction-related heavy equipment by requiring spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills.

Water sourced from dewatering activities would be pumped into Baker tanks or equal (SHN 2020). Water sourced from dewatering would not be illegally discharged to on-site one-parameter wetlands or Humboldt Bay to cause polluted runoff.

Given implementation of Mitigation Measure GEO-2 and HWQ-1 would require BMPs to control erosion, sediment, and other hazardous materials potentially resulting from construction and that water sourced from dewatering would not be discharged to any wetlands or surface waters, the potential impact from construction would be less than significant.

Mitigation

Mitigation Measure HWQ-1: Implement Stormwater Protection Pollution Prevention Plan (SWPPP)

The Project will seek coverage under State Water Resources Control Board (Water Board) Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction and Land Disturbance Activities. NAFC will submit permit registration documents (notice of intent, risk assessment, site maps, Stormwater Pollution Prevention Plan (SWPPP), annual fee, and certifications) to the Water Board. The SWPPP will address pollutant sources, BMPs, and other requirements specified in the Order. The SWPPP will include erosion and sediment control measures, and dust control practices to prevent wind erosion, sediment tracking, and dust generation by construction equipment. A Qualified SWPPP Practitioner will oversee implementation of the Project SWPPP, including visual inspections, sampling and analysis, and ensuring overall compliance.

Implementation of Mitigation Measure HWQ-1 would reduce potential construction related impacts to water quality to a less than significant level.

Operational

In addition to preparing a Construction General SWPPP as detailed in Mitigation Measure HWQ-1 (in compliance with State Water Quality Control Board Order No. 2009-0009, as amended by Order No. 2010-0014), the Project would also obtain an Industrial SWPPP (in compliance with State Water Quality Control Board Order No. 2014-0057-DWQ).

The Industrial SWPPP would require the Project to implement industrial stormwater BMPs, such as good housekeeping, preventative maintenance, spill and leak prevention and response, material handling and waste management, erosion and sediment controls, employee training, and quality assurance and record keeping BMPs in accordance with the Industrial General Permit (IGP) guidelines. An Industrial SWPPP permit also would require the Project to sample stormwater discharges at least four times a year (during two qualifying storm events from July-December and two qualifying storm events from January-June each year); report sample results; inspect, maintain, and modify site-wide operations BMPs; provide employee training; and complete annual reports for the facility on an annual basis in compliance with the IGP operations requirements. As outlined in the preliminary stormwater design for the facility (GHD 2021e, Appendix H), no off-site stormwater discharge is expected for events up to a 100-year storm event; therefore, stormwater discharge sampling is not anticipated to occur or be required at the Project Site.

The Project would utilize the existing ocean outfall pipe and multiport diffuser to discharge water from the facility to the ocean. The multiport diffuser has 72 ports on either side of the pipe (total of 144 ports), each port is 2.4 inches in diameter at a spacing of 12 ft between ports (Appendix E). The Project would open an additional 24 diffusers (48 ports). When combined with the existing 8 open diffusers (16 ports), a total of 32 diffusers (64 open ports) would be operational (Appendix E).

The Project would have an average discharge of approximately 8,700 gallons per minute (GPM). Source waters to the facility would be a mixture of marine (from Humboldt Bay) and treated freshwater (from the Humboldt Bay Municipal Water District via the Mad River)

yielding a salinity of approximately 26.8 practical salinity units (psu). Effluent temperature from the facility would range between 68 and 72°F. After passing through the facility and prior to discharge through the RMT II outfall infrastructure, the effluent would pass through an advanced wastewater treatment plant (i.e., moving bed biofilm reactor, a membrane bioreactor and UV-C sterilization), thereby attaining low levels of inorganic nutrients and organic suspended solids (Appendix E).

Near-field modelling completed for the Project predicts the dilution of a plume with the receiving marine waters in close proximity to the diffuser from momentum (jet-induced mixing upon exiting the port) and/or buoyancy (mixing as the plume rises through the water column). Modeling results predict mixing zone (i.e., marine toxicity and physiological stress to biotic receptors) would be met within 5 feet of the diffuser on the basis of the near-field modelling. The port exit velocity of approximately 10 feet per second would also maintain the ports clear of sediment build-up and biofouling and maintains optimal levels of jet-induced near-field mixing. Modeling results also predicted the risk of enhanced pelagic productivity from elevated nutrients in the surface and mid- water column is 'very low'. Similarly, the risk of enhanced benthic productivity from elevated nutrients in the near-seabed waters is 'very low'. Modeling concluded the predicted organic gross sedimentation rates during both scenarios are very low and pose a low risk of impacting the benthic community (Appendix E). Based on these modeling results, the effluent discharge would be compliant with established water quality thresholds in the Ocean Plan and the Thermal Plan. Additionally, the effluent discharge would be regulated under the NPDES program, which would require regular compliance monitoring. Failure to comply with NPDES permit requirements would result in penalties, fines, modified orders, and other regulatory compliance actions.

Operational stormwater would be monitored under the Industrial SWPPP, also requiring compliance with regulated water quality parameters. Furthermore, modeling results indicate the effluent discharge would not result in any significant water quality impacts, and the effluent discharge would be regulated and monitored through the NPDES program. With compliance with regulatory requirements for the Industrial SWPPP, any potential impact resulting from operational stormwater or the effluent discharge into the Pacific Ocean would be less than significant.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin? (No Impact)

The Project is located in groundwater basin 1-009 - Eureka Plain (DWR 2020) and is not listed as a basin in Critical Conditions of Overdraft (DWR 2016). The Project would increase impervious surface from 18.8 acres to 25.9 acres (20% net increase) from buildings and paving the area around buildings. The Project would not decrease groundwater supplies or interfere with groundwater management.

Depth to groundwater measurements at the Project Site indicate the elevation of the groundwater table is about 12 feet relative to sea level (approximately 10 feet to 13 feet below the existing ground surface) across the Project Site. Based on review of the historical groundwater data, the groundwater surface is nearly level with little to no discernible gradient (SHN 2020).

SHN (2020) noted fluctuations of a few feet or more in the groundwater elevation are expected to occur at the Project Site in response to the seasonal rainfall. Free groundwater

and wet soil conditions would likely be encountered within any excavation greater than approximately ten feet deep below existing site grades. Flowing sands, caving conditions, and the rapid flow of water would also be anticipated for excavations that extend below the groundwater surface elevation.

Groundwater mounding has the potential to occur beneath stormwater management structures designed to infiltrate stormwater runoff. Concentrating recharge in a small area can cause groundwater mounding that affects the local water table by altering flow directions or causing groundwater to reach the surface (Colorado School of Mines 2005 cited in Appendix H). Groundwater mounding typically occurs in subsurface soils with low hydraulic conductivity (fine textured soils). Historical site-specific investigations at the Project Site demonstrate that the subsurface soils are extremely transmissive unconfined dune sands that are tidally influenced, with a minimum depth to groundwater of approximately 12 feet below ground surface (Appendix H). Review of the historical data for the Project Site indicates the Project Site would have sufficient capacity to assimilate additional stormwater in excess of natural infiltration and groundwater mounding is not anticipated to occur (Appendix H).

The Project is being designed to stay above water table for feasibility, environmental, and cost considerations. It is unlikely that dewatering will be needed for the foundation installation and construction of the site. However, if it is determined dewatering might be required, all appropriate dewatering/soil erosion/sediment control measures and plans will be developed and approved prior execution of work. Measures to control the flow of groundwater during excavation and construction are incorporated into Mitigation Measure HWQ-1 and would be implemented during construction. Any groundwater encountered during demolition and construction that requires removal would be pumped into appropriate containers, such as a Baker tanks for characterization. Excavation depths for construction are not anticipated to extend to groundwater and the use of dewatering wells for the Project is not planned (SHN 2021b). Water sourced from dewatering would not be discharged to on-site one-parameter wetlands or Humboldt Bay to cause polluted runoff. Development of a plan for water management that includes handling, storage, testing, treatment, monitoring, and discharge will be prepared for the Project and submitted to the RWQCB for approval if dewatering is required to complete the Project. The plan will use available groundwater testing results to identify appropriate treatment and include a monitoring program to ensure discharge parameters contained in the permit are met. There would be no impact to groundwater supplies, recharge, or sustainable groundwater management as a result of the Project.

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

The Project Site is generally flat and located in what was formerly a coastal dune environment, prior to development. The topography of the Project Site does not support drainage to Humboldt Bay or the Pacific Ocean via tributaries or ditches.

The existing drainage pattern on the Project Site is based on infiltration into the ground where pervious surfaces exist. Where impervious, an existing stormwater pipe borders the Project Site along the northern and western edge. The existing stormwater system on the western side of the Project Site connects to the RMT II ocean outfall to discharge stormwater

to the Pacific Ocean: on the eastern side of the Project Site, the existing stormwater system discharges to Humboldt Bay. It is unknown if the existing stormwater pipes functions and actually discharges to the Pacific Ocean under present conditions, given the dilapidated abandoned condition of the overall Project Site.

The Project would increase impervious surfaces from approximately 18.8 acres to 25.9 acres. Stormwater runoff from the proposed additional impervious surface would be accounted for in the Project's stormwater design and associated Construction SWPPP permitting. The Project's stormwater design would include a series of four bioretention and infiltration ponds combined with Low Impact Development (LID) facilities to manage stormwater generated on the Project Site. The ponds and LID features would have capacity for stormwater from events up to the 100-year storm event without requiring off-site discharge. Additional details about the Project's stormwater design approach are detailed in Appendix H – Nordic Aquafarms Preliminary Stormwater Analysis.

During construction, Mitigation Measure GEO-2 and HWQ-1 would be implemented to ensure compliance with the Construction General Permit (CGP) and implementation of erosion control BMPs to avoid sediment inputs related to construction and ground disturbance. A temporary detention basin would be installed around the entire perimeter of the Project Site to capture and infiltrate stormwater generated from the site up to the five year, 24-hour storm event during construction. Any stormwater that exceeds the capacity of the temporary stormwater detention basin will be tested for turbidity in compliance with the Construction General Permit for off-site stormwater discharge.

Following construction, no off-site stormwater discharge is anticipated to occur at the Project Site. In the event that off-site stormwater discharge does occur, the Industrial SWPPP for the Project would outline the location, frequency, and laboratory analytical (which includes analyzing samples for total suspended sediments) requirements for water quality monitoring to ensure compliance with the IGP.

Erosion control measures implemented during construction combined with operational monitoring requirements under the Industrial SWPPP would limit any potential impact related to siltation or erosion. Given the Project Site does not naturally drain off-site, to the Pacific Ocean, or to Humboldt Bay, the Project Site is largely impervious, reducing erosion potential by limiting surface exposure to bare soils, and that the planned stormwater design would include capacity for storms events up to the 100-year event, erosion or siltation on- or off-site would not be expected. Any potential impact would be less than significant.

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

The Project Site is generally flat and does not include a river, stream, or other tributary (live surface waters). The Project Site is not tidally inundated, even during king tides (Appendix H). The Project Site is located outside the FEMA 100-year flood zone (Humboldt County 2020). Under existing conditions, fluvial and tidal flooding do not occur on the Project Site.

As previously discussed, the Project would increase impervious surfaces from approximately 18.8 acres to 25.9 acres on the Project Site. Stormwater runoff from the proposed additional impervious surface would be accounted for in the Project's stormwater design and associated Industrial SWPPP permitting. The stormwater design would include four large bioretention and infiltration ponds located throughout the Project Site as well as a

series of LID features to capture and treat stormwater on-site. Stormwater design features would be planted in accordance with the overall landscaping design.

Stormwater modeling methods, results, and other stormwater design details can be found in Appendix H. The Project's stormwater drainage system would have capacity for on-site retention of stormwater resulting from events up to the 100-year event (Appendix H). Thus, on- and off-site flooding would not occur. Any potential impact related to surface runoff and on- and off-site flooding would be less than significant.

c, iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (Less-than-Significant with Mitigation)

As discussed above in Section 4.10 c (i) and (ii), the Project's planned stormwater design, inclusive of LID components, would meet the State Regional Water Quality Control Board's requirement for supporting a post-development stormwater flow off the property for 85th percentile, 24-hour storm event (heavy rainfall event) and would retain all stormwater from a storm event up to the 100-year event on-site (Appendix H). The planned stormwater design would account for stormwater runoff from the increase area of impervious surface.

Water quality concerns as they related to COPCs in soil and groundwater at the Project Site are evaluated in Section 4.10 (d). Any potential impacts related to COPCs in soil and groundwater would be avoided with the implementation of a Health and Safety Plan and a Soil Gas Monitoring Program, which are subsets of Mitigation Measure HAZ-1 (Section 4.9) and would implement measures from the Interim Measures Work Plan (SHN 2021b). With the construction of the planned stormwater design features and implementation of Mitigation Measure HAZ-1, operational sources of polluted run-off would be reduced to be less than significant.

c, iv) Impede or redirect flood flows? (Less-than-Significant)

The Project is not located in a FEMA 100-year flood zone (Humboldt County 2020). There is not a tributary on or near the Project Site that could contribute to flooding. The Project Site is never tidally inundated, even during king tides (Appendix H). Under existing conditions, the Project Site does not experience fluvial or stormwater-related flood flows. All surface waters would be limited to stormwater flow during precipitation events and would be attenuated by the Project's planned LID stormwater design features, accommodating stormwater up to a 100-year event. Any potential impact would be less than significant.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (Less-than-Significant)

Flood Hazard Zone

The Project Site is located outside of the FEMA 100-year flood zone (Humboldt County 2020). However, the 100-year flood zone is located adjacent to the Project Site, immediately west of the Project Site along the Humboldt Bay shoreline. Flooding would thus only occur on the Project Site as a result of a highly infrequent flood event in excess of the 100-year return period (e.g., tsunami event, discussed below).

The State Water Resources Control Board's Construction General Permit would require that the Project's stormwater design to capture and treat stormwater generated from the 85th percentile, 24-hour storm event (heavy rainfall event). All stormwater from a 100-year event

would be captured and retained on-site; discharge of stormwater from a flood event would not be discharged to Humboldt Bay or the Pacific Ocean for events up to the 100-year return period (Appendix H). As such, potential pollutants would not be released to Humboldt Bay or the Pacific Ocean as a result of a 100-year flood event.

Existing stormwater piping that discharges to Humboldt Bay and the Pacific Ocean via the RMT II ocean outfall would be retained and remain operational for managing stormwater generated from a substantial and unprecedented flood event in excess of a 100-year event or a tsunami. To prevent stormwater from entering the existing piping, the stormwater design would include elevated drainage inlets that would preclude capture and discharge of stormwater to Humboldt Bay for all events up to a 100-year event.

Given the Project Site is located outside the FEMA 100-year flood zone and stormwater generated by a 100-year event would be entirely retained on-site and not discharged to Humboldt Bay or the Pacific Ocean to risk release of pollutants, the impact of pollutants released as a result of a flood hazard event would therefore be less than significant.

Seiche Zone

The project is not located in a seiche zone. No impact would result from a seiche.

Tsunami Inundation

The site is located within the mapped Tsunami Inundation Area on the "Tsunami Inundation Map for Emergency Planning, Eureka Quadrangle" (CGS 2009 cited in SHN 2020). If a large earthquake were to occur on the Cascadia Subduction Zone, the Project Site and entire North Spit would be subject to tsunami inundation. Due to unknowns related to road condition and congestion, sheltering in the TVERS area until an all clear is issued is considered the most conservative approach to protection of the staff.

Based on the geologic evidence synthesized by SHN (2020), the potential for the Project Site to be subject to tsunami inundation should be considered high in the event of a Cascadia Subduction Zone-generated tsunami. It is estimated that wave scour depths of up to 10 feet could potentially occur in the non-cohesive sandy soils at the site due to the high tsunami flow velocities across the North Spit (Chock 2019 cited in SHN 2020). Because the depth of scour would otherwise jeopardize the structural integrity of the buildings, deep foundations and ground densification grade would be constructed as recommended by the Project's geotechnical evaluation and site-specific tsunami inundation analysis.

The site-specific tsunami hazard analysis included a generated time history of flow depth and velocities for the Project Site (Martin & Chock 2020). The analysis applied the American Society of Civil Engineers (ASCE) Standard, which is a Maximum Considered Tsunami (MCT) with a 2% probability of being exceeded in a 50-year period, the equivalent to a return period of approximately 2,500 years (Martin & Chock 2020). Results indicated tsunami flow depth would be greatest along the north edge of the Project Site, nearest Building 1, with flow depths dissipating toward the south edge of the Project Site (Martin & Chock 2020). The report also took into account 4.1 feet of sea level rise, derived from the California Coastal Commissions Sea Level Rise Policy Guidance for low risk aversion for the year 2100 (CCC, 2018).

Based on the findings and recommendations of the site-specific tsunami evaluation (Martin & Chock 2020), site-specific design conditions would be included for the design of each individual building and their structural systems, as well as nonstructural systems, and to numerically validate the expected performance of any mitigating features (Martin & Chock

2020, SHN 2020). As such, exterior corners of buildings that are most likely to be directly impacted by a tsunami would be rounded to better deflect tsunami-related flow and flow depths and velocities experienced by other structures on the Project Site (Martin & Chock 2020). Specifically, the design of Phase 1 will be sited such that it would shield Phase 2, additional grow-out buildings, and infrastructure from the impacts of wave run up action in the event a tsunami.

In addition, backup generators would be elevated above the predicted tsunami wave height to avoid potential for release of pollutants in the event of a tsunami. Diesel fuel storage would be underground in two 25,000-gallon tanks vented, anchored, and armored to prevent release. Similarly, other potential pollutants such as water treatment chemicals, concentrated wastes, and process chemicals will be stored in areas designed to withstand tsunami forces or in areas above the maximum predicted wave height to prevent any potential release to the environment.

These design principles will be implemented to avoid any damage that could be caused to human life or the Project as a result of a tsunami. In the event of a tsunami that was severe enough to mobilize vehicles and potentially damage the Project's structures, the cumulative environmental and human impact would be catastrophic and the impact directly attributable to the Project would be insubstantial by comparison. The impact of pollutants released as a result of a tsunami would therefore be less than significant.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan (Less-than-Significant)?

The relevant water quality control plans for the Project include:

- NCRWQCB Basin Plan, which establishes thresholds for key water resource protection objectives for both surface waters and groundwater;
- The Ocean Plan and the Thermal Plan, which establish thresholds germane to the planned discharge through the RMT II ocean outfall;
- Humboldt Bay's listing on the Clean Water Act 303 (d) list for impair water bodies for dioxin and polychlorinated biphenyls (PCBs); and
- Humboldt Bay Municipal Water District 2015 Urban Water Management Plan.

As discussed in Section 4.10 (a), there are no waters present on the Project Site and wetlands are limited to a one-parameter coastal willow clusters east of Vance Avenue. Construction impacts to water quality in nearby Humboldt Bay would be avoided via implementation of BMPs and SWPPP requirements included in Mitigation Measure GEO-2 and HWQ-1. Thus, a conflict with the NCRWQCB Basin Plan as a result of construction-related water quality impacts would not occur.

Operational water quality impacts to Humboldt Bay would also not occur, as the stormwater design for the Project would accommodate stormwater from an event up to a 100-year event on-site without discharge off-site via a series of large detention ponds and LID features. Operational stormwater is further detailed above in Section 4.1 (c) and in the Appendix H. Thus, a conflict with the NCRWQCB Basin Plan as a result of potential operational water quality impacts would not occur.

As discussed in Section 4.10 (b), groundwater management would be required during construction; however, groundwater would not be degraded or reduced as a result of the Project.

The Project Site is located on a former pulp mill site that remains an active Brownfield site (Regional Water Quality Control Board case no. 1NHU892). With the exception of a few of the LID stormwater facilities located between Buildings 3 and 4, footprints of the proposed stormwater basins and LID features would not be located in areas with any remaining COPCs (Appendix H). The stormwater discharge volumes from the limited LID features that overly COPCs are anticipated to be relatively minor since this area captures minimal surface area of stormwater runoff. Thus, based on the location of almost all of the stormwater management structures being outside of the primary areas of known contamination, the limited infiltration volumes into the LIDs that do overlap the COPCs between Buildings 3 and 4, the Project would have no significant impact on the residual soil and groundwater plumes at this site (Appendix H). Thus, the Project would not result in dioxin, furan, or other COPC contamination to groundwater resources and would not conflict with the NCRWQCB Basin Plan or the Humboldt Bay 303(d) listing for dioxins and PCBs.

As discussed in Section 4.10 (a), modeling required for the Project's NPDES and CCC Coastal Development Permit to authorize the use of the RMT II ocean outfall for discharge into the Pacific Ocean was conducted and is reported in Appendix E. Results indicate that the Project's effluent discharge would be fully compliant with both the Ocean Plan and the Thermal Plan, and a conflict with these plans would not occur.

Senate Bill (SB) 610 requires every urban water supplier to identify, as part of its urban water management plan, the existing and planned sources of water available to the supplier over a prescribed 5-year period. Additionally, a water quality assessment is required under SB 610 for industrial projects occupying more than 40 acres of land or having more than 650,000 square feet of floor area. As the lead agency, the County analyzed the Humboldt Bay Municipal Water District 2015 Urban Water Management Plan (UWMP) regarding the capacity to serve the Project Site based on the proposed water usage required for operations. According to the Urban Water Management Plan (HBMWD 2015), the District has estimated that demand up to 36 million gallons per day can be met reliably, even if the unprecedented conditions of continuous hydrology similar to the 1976-1977 drought occurred. Additionally, the UWMP identifies two former pulp mills, including the former pulp mill located at the Project Site, as former users of both industrial and domestic water supplied by HBMWD. The site contains existing water infrastructure that has been utilized by former pulp mill tenants, and will continue to support reliable water delivery to the Project Site. A will-serve letter was provided by the HBMWD on March 12, 2021. The letter confirmed the District has sufficient water to provide the needs of the Project, which include domestic water in the amount of 300,000 gallons per day and industrial non-potable water of 3 million gallons per day to the Project Site. Based on our analysis of this evidence, the SB 610 requirements have been satisfied.

Given the Project would not result in a conflict with the NCRWQCB Basin Plan, Ocean Plan, Thermal Plan, Urban Water Management Plan or Humboldt Bay's TMDL listing for dioxin and PCBs, any potential impact would be less than significant.

4.11 Land Use and Planning

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

Impact Analysis

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

The Project would not divide an established community. The Project Site and surrounding area is an overwhelmingly industrial area with the nearest residential communities being Fairhaven and Finntown, which are located approximately one mile to the southwest. The town of Samoa is located approximately one mile to the northwest. The Project would not block, modify, or alter vehicle or pedestrian circulation on any existing streets or paths. No impact would result.

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

The Project Site is zoned Coastal Dependent Industrial (MC); the proposed use of "Aquaculture" is principally permitted in this zone. Principally permitted uses are uses that are explicitly approvable and expected within a given zone district. The Humboldt County Code contains a number of land use regulations intended to avoid and mitigate environmental impacts. Among these, §313-45.1 of the Humboldt County Code contains industrial performance standards intended to reduce the impact of coastal industrial development on coastal resources.

Humboldt County Code §313-45.1 seeks to reduce the impact of coastal dependent industrial development on coastal resources by requiring alternative sites to be considered for new coastal dependent industrial uses. Alternative sites, once identified, are classified according to a priority schedule consisting of four levels, ranging from Priority 1 to Priority 4.

Priority 1 sites are considered the most suitable (i.e. minimal impacts to coastal resources), while Priority 4 sites are considered the least suitable. Following consultation with the County Staff, the proposed facility was found to be a Priority 2 site because it requires the construction of new facilities to accommodate the proposed use but does not involve the conversion of wetlands. The Alternative Sites analysis required by the Humboldt Bay Area

Plan (HBAP) (incorporating Section 30260 of the Coastal Act) is distinct from the alternatives analysis typically found in an Environmental Impact Report (EIR) under CEQA.

The Alternative Sites analysis required by §313-45.1.3.1 was initiated by County Staff as a component of the required corresponding Coastal Development Permit application. Priority Site 2 Letters seeking alternative site location proposals for the Project were sent to the following agencies in November 2020: California Coastal Commission, Humboldt Bay Harbor Recreation and Conservation District, Army Corps of Engineers, and the Humboldt County Planning and Building Department, Long Range Planning Division. Based upon responses received from the solicited agencies, the County has determined the RMT II Site is the most appropriate location for the proposal, given the alternative sites evaluated do not meet the minimum project requirements, including necessary intake and outfall infrastructure. Given the Project is a principally permitted Priority 2 site, requirements of the Local Coastal Program would be met, the Project would be consistent with the applicable policies of the certified Local Coastal Program and the Humboldt County Code, and would therefore have a less-than-significant impact.

4.12 Mineral Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				✓
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				✓

Impact Analysis

a, b) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (No Impact)

The Project would not be developing mineral resources. The Project Site is composed of dune deposits and does not include mineral resources. As a result of site grading and excavation, native soil and earthen material would be reused on-site for foundation fill. Limited excavated soil will be hauled off-site for legal re-use or disposal by the contractor. This material is predominantly sandy substrate from the underlying historic dune deposit and would not be predominantly comprised of gravel, rock, or other mineral resources.

To the greatest extent feasible, existing on-site material (e.g. rock, cement) would be recycled and repurposed to minimize the need to import new base rock and other mineral resources. Base rock and other materials (concrete and asphalt) would be imported to the Project Site. Removal of the limited excavated native soil from the construction area and use of imported base rock would not result in a detrimental loss of a mineral resource. The Project does not require a substantial amount of any mineral resource for construction, although some mineral resources (primarily aggregate and rock) may be needed for construction.

There are no known mineral resources or U.S. Geological Survey (USGS) records within the Project footprint. Due to the absence of mining operations and identified mineral resources at the Project Site, construction would have a less than significant impact on mineral resources, and operation of the Project would have no impact on mineral resources.

4.13 Noise

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

Impact Analysis

Impact analysis for this section is partially based on technical analysis completed in the Samoa Peninsula Land-Based Aquaculture Project Construction Noise, Vibration, and Hydroacoustic Assessment (Appendix J, Illingworth & Rodkin). Impact analysis included evaluation of noise and vibration resulting from three potential construction methods, including rammed aggregate piles, vibro displacement columns, and vibro soil densification. Impact analysis also evaluated noise and vibrations that would result from installation of sheet piling using a vibratory pile driver and installed to a depth of approximately 30 feet (Appendix I).

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

Current noise conditions on and near the Project Site consist of local traffic on New Navy Base Road and adjacent operations related to nearby businesses. The nearest noise-sensitive residential land uses are located approximately 0.4 miles to the south and 0.8 miles to the north and the nearest schools are located over 1 mile from the site. Additional industrial and commercial land uses are in the City of Eureka, approximately 0.5 miles to the east.

Construction

Construction of the Project would temporarily increase noise in the immediate vicinity of the Project Site. Noise impacts resulting from construction would depend upon the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise sensitive areas. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise sensitive land uses or habitats, or when construction lasts over extended periods of times. Construction activities generate considerable amounts of noise, especially during earthmoving activities when heavy equipment is used.

The noise and vibration evaluation considered both construction phasing as detailed in Section 2.4.1 and three potential construction methods; rammed aggregate piles, vibro displacement columns, and vibro soil densification compaction. Based on a review of the equipment anticipated, construction noise levels of all three methods are anticipated to be below 88 dBA Leq at 50 feet. However, the construction method options would be similar to vibratory pile driving, in which case, noise levels could be up to 93 dBA Lmax at 50 feet. Therefore, it was assumed that deep foundation piling could generate continuous noise levels of 88 dBA Leq and intermittent noise levels of up to 93 dBA Lmax at 50 feet. These levels were used as conservative levels to assess impacts on nearby land uses (Appendix J).

Humboldt County does not establish quantitative limits for construction-related noise, and the Humboldt Bay Area Plan does not include applicable noise-related policies. Based on criteria commonly used throughout California, this analysis considers construction noise impacts to be significant where noise from construction activities exceeds 60 dBA L_{eq} and exceeds the ambient noise environment by at least 5 dBA L_{eq} at noise-sensitive uses (residential) in the Project vicinity for a period exceeding one year. For commercial uses, a significant impact would be identified if construction noise were to exceed 70 dBA L_{eq} and exceeds the ambient noise environment by at least 5 dBA L_{eq} for a period exceeding one year. The nearest sensitive residential receptors along Fay Street to the south would be exposed to levels between 47 to 56 dBA L_{eq} and sensitive residential receptors along Cutten Street to the north would be exposed to levels between 40 to 49 dBA L_{eq}. This is below 60 dBA L_{eq}. The nearest commercial/industrial uses adjacent to the Project Site on Vance Avenue would be exposed to levels between 55 to 64 dBA L_{eq}, which would be below 70 dBA. While construction duration will last longer than one year, and may intermittently exceed ambient levels at nearby receptors, construction operations would not be anticipated to result in a substantial temporary increase in noise levels at the nearest land uses (Appendix J). Any potential impact would be less than significant.

Operation

Noise and vibration resulting from operation of the Project would comply with the Industrial Performance Standards as established in Humboldt County Code Section 313-103-1. Operational noise would primarily consist of vehicles entering and leaving the Project Site, consistent with the overall industrial zoning and use of the vicinity. Operational activities would not result noise in excess of established noise thresholds for industrially zoned areas. Operational activities would be primarily based inside the facility; any resulting noise would be buffered by the buildings. Exterior operational noise would be related to vehicles coming

and going from the Project Site, loading/unloading trucks, and general site maintenance (e.g., landscaping).

The two backup generators would be installed inside the facility and would be operational for approximately 500 hours annually. Backup generators may be operational outside of daytime hours in the event of a nighttime power outage. Otherwise, use of the generators for peak power shaving or standard testing and maintenance would occur during daytime hours. The generators would be installed within required OSHA housing. The OSHA housing and the building itself would buffer any exterior noise to acceptable levels. Given the nearest sensitive receptors (residential housing) are located 0.4 miles to the south and 0.8 miles to the north, operational noise would consistent with existing commercial/industrial operational noise at and near the Project Site, and operational noise in excess of noise thresholds would not occur, any potential impact related to operational noise would be less than significant.

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

Humboldt County does not establish vibration limits to minimize the potential for cosmetic damage to buildings. However, the California Department of Transportation (Caltrans) recommends a vibration limit of 0.5 in/sec peak particle velocity (PPV) for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.08 in/sec PPV for ancient buildings or buildings that are documented to be structurally weakened (Appendix I). No known ancient buildings or buildings that are documented to be structurally weakened adjoin the Project Area. Conservatively, groundborne vibration levels exceeding 0.3 in/sec PPV would have the potential to result in a significant vibration impact (Appendix I).

The noise and vibration evaluation assessed typical vibration levels that could be expected from construction equipment at a distance of 25 feet, inclusive of required equipment and methods for all four potential construction options. Project construction activities, such as drilling, the use of jackhammers, rock drills, and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.) may generate substantial vibration in the immediate vicinity. In particular, any of the deep foundation piling options could generate substantial vibration in the immediate vicinity. The equipment specifications for each deep foundation piling option were reviewed and calculated for comparison at a common reference level of 25 feet (Appendix J).

A 270-foot-tall smokestack will be imploded as part of the demolition proposed for the project. The smokestack is 900 feet from a water tank located to the west, 1,500 feet from a woodchip facility located to the south, and 2,500 feet from the nearest residences located to the south. Vibration caused by the collapse of the structure and the air overpressure (noise) caused by the detonation of the explosives are of primary concern at these receptors.

The California Department of Transportation and others have established criteria relating the likelihood of damage to structures from vibration. For residences, vibration levels should not exceed 0.5 to 1 in/sec PPV in order to avoid “threshold damage”. Threshold damage is defined as “loosening of paint; small plaster cracks at joints between construction elements; lengthening of old cracks”. The damage threshold for load bearing masonry walls,

engineered structures, heavy commercial buildings, or higher levels of damage to residential structures, is 2 in/sec PPV or greater. Damage to old or poorly glazed windows does not occur until air-overpressure reaches about 150 dB(L) according to the United States Department of the Interior, Bureau of Mines (USBM).

Ground vibration from implosion of the smokestack would occur when the imploded structure impacts the ground. Data from a larger implosion project (JEA St. John's River Power Plant Boilers and Chimney[2]), was reviewed to credibly estimate worst-case vibration levels expected with the proposed implosion of the 270-foot-tall smokestack. The similar implosion project involved the implosion of two boiler units and one 650-foot-tall stack. At distances of approximately 800 to 1,100 feet, ground vibration levels produced by the larger implosion project ranged from 0.160 to 0.610 in/sec PPV. At distances of 1,300 to 1,500 feet, ground vibration levels produced by the larger implosion project ranged from 0.150 to 0.360 in/sec PPV. Vibration levels would be less at distances of 2,500 feet or further, representing the nearest residential receptors. The data from the similar, but larger implosion project indicate that the residential threshold (0.5 to 1 in/sec) or engineered structures (2 in/sec PPV or greater) thresholds would not be exceeded with the implosion of the 270-foot-tall smokestack.

At distances of approximately 800 to 1,100 feet, air-overpressure levels produced by the larger implosion project ranged from 142 to 150 dB(L), and at distances of 1,300 to 1,500 feet, air-overpressure levels produced by the larger implosion project ranged from 141 to 142 dB(L). Air-overpressure levels would be less at distances of 2,500 feet or further, representing the nearest residential receptors. Air-overpressure levels resulting from the implosion of the 270-foot-tall smokestack would be expected to fall below 150 dB(L) at any buildings having windows at the woodchip facility and at the nearest residences to the south.

Vibration levels would vary depending on soil conditions, construction methods, and equipment used. The water storage tank to the west would be as close as 600 feet from the shared property line. Vibrations may be slightly perceptible but would be unlikely to cause damage to any structure. The woodchip distribution facility, biomass facility, and residential buildings located further to the south would be exposed to lower vibration levels (Appendix J). Ground vibration from implosion of the smokestack would not exceed residential, or engineered structures thresholds. As reported in the noise and vibration evaluation, this would result in a less-than-significant impact to sensitive land uses and structures near the Project Site.

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

As discussed in Section 4.9 (e), publicly owned Samoa Field Airport is located approximately 1.5 miles from the Project Site. The airstrip is used infrequently by small craft airplanes only. Noise from these infrequent small craft airplanes would not affect workers at the Project Site, and vice versa. No impact would result.

[2] Source: TLG, LLC. 2019. 2018 Revisions to: Vibration & Air Overpressure Monitoring Report for the Demolition of the JEA St. Johns River Power Park, p. 4.

4.14 Population and Housing

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			✓	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			✓	

Impact Analysis

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? (Less-than-Significant)

The Project would not be growth inducing and would not propose or result in new homes or businesses directly or indirectly. New roads or other off-site infrastructure would not be constructed. The Project is estimated to employee approximately 140 employees. It is anticipated that the vast majority of these employees would be hired locally. Because the majority of future employees already live in the area, they would not create a significant demand for additional housing.

The Project would result in an increase in employees on the Samoa Peninsula, which could increase incidental demand for general retail and services such as lunch-time restaurants. An increase in these types of businesses would occur consistent with existing zoning in the area and the availability appropriately zoned land and commercial space. The impact would be less than significant.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (Less-than-Significant)

The Project would be located on a parcel containing an industrial Brownfields site. No housing currently exists on the Project Site nor does the Project Site's zoning permit residential uses aside from a caretaker's residence. Thus, there would be no need for replacement of either affordable or market-rate housing. The potential impact would be less than significant.

4.15 Public Services

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				✓
Fire Protection?				✓
Police protection?				✓
Schools?				✓
Parks?				✓
Other public facilities?				✓

Impact Analysis

a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for public services? (No Impact)

The Project will not necessitate new or physically altered government facilities. The Project's facility's fire and medical response needs can be met by the PCSD Fire Department (Nicolini personal communication 2020). Hazardous materials emergency response is provided by the Humboldt Bay Fire via a mutual aid agreement. Water based fire suppression is provided by the Harbor District. The Project would not increase the need for additional police protection. As the proposed facility is not growth inducing, the need for additional school, parks, or other public facilities would not increase. No impact would result.

4.16 Recreation

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

Impact Analysis

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (No Impact)

The Project Site is not currently open to the public, nor has it supported recreational activities in the past. The Project Area does not have a history of land uses involving recreation; rather it has been used as a pulp mill site and for industrial paper manufacturing. Construction of the Project would not block access or in any way limit access to the three nearby coastal access points, including boating recreation on Humboldt Bay. The Project would not include the use of existing parks or recreational facilities; thus, use of such facilities would not increase or accelerate. Incidental use of the beach access points near the proposed facility may occur given close proximity. No impact would result.

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

There is no federal, state, or local policy in effect that would necessitate the creation or expansion of a recreational facility as a result of the Project. The policies of the HBAP call for the protection of existing coastal points, but does not impose a requirement to create or expand coastal access in this situation. Therefore, the Project would not result in the required construction or expansion of recreation facilities. No impact would result.

4.17 Transportation

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

Roadways

The Samoa Peninsula has limited vehicular access. New Navy Base Road is the primary route that links development along the peninsula. Immediately north of the town of Samoa, New Navy Base Road intersects with SR 255 and splits – resulting in one route southeast over the Samoa Bridge to Eureka and US 101 and one route north through the remainder of the Samoa Peninsula where it connects to US 101 in Arcata. These are the only two routes available for employees, visitors, and freight traffic to access the Project Site. Immediate access to the Project Site is provided by Vance Avenue, which runs parallel to a portion of New Navy Base Road. Vance Avenue is connected to New Navy Base Road primarily by Bay Street and LP Drive.

New Navy Base Road and Vance Avenue fall under the jurisdiction of the County of Humboldt which has identified New Navy Base Road as a Regionally Significant Street and Roadway (arterial) as part of the 2008 Regional Transportation Plan (HCAOG 2017). SR 255 falls under the jurisdiction of California Department of Transportation (Caltrans). All of these roads are two-way roads with one travel lane in each direction.

Pedestrian and Bicycle Facilities

As specified in the Humboldt County Regional Transportation Plan, all streets, roadways, and highways in Humboldt County are open to bicycle use (HCAOG 2018).

The Humboldt County Regional Bicycle Plan identifies New Navy Base Road through the Project Site as a proposed future Class I bike path, which is defined as a separated, surfaced right-of-way designated exclusively for non-motorized use (can be solely for bicyclists, or can be shared with pedestrians and/or equestrians). The minimum width for each direction is 8 feet (1.5 meters), with a 5 feet (2.4 meter) minimum width for a bi-directional path. The proposed Class I bike path would continue north along SR 255 to the

City of Arcata (HCAOG 2018). Roadways in the Project Area do not include sidewalks, so pedestrians are limited to the roadway shoulder or in the road right-of-way.

Public Transit

There are no commuter transit services or fixed-route public transit routes in the Samoa Peninsula. Dial-A-Ride (DAR) services are available in the Project Site through the Humboldt Transit Authority. Paratransit is a form of transportation service that is more flexible and personalized than fixed route or commuter transit service. Paratransit is tailored to the needs of disabled and elderly individuals. Paratransit services include DAR, Dial-A-Lift (DAL), and non-emergency medical transportation services (HCAOG 2017).

DAR and DAL are discount transportation services available to seniors and/or the disabled with a doctor's verification of disability. These services are also available to individuals over the age of 72, regardless of their medical condition. A reservation must be made to utilize either DAR or DAL.

Airports

Humboldt County includes nine public airports; the nearest to the Project Site is Samoa Field Airport, which is owned and managed by the City of Eureka. Samoa Field Airport is not included in the County's Airport Land Use Compatibility Plan; therefore, Samoa Field Airport does not include any Land Use Compatibility Zones. However, it is located within Airport Protected Airspace (CC 333/FAR 77), specifically within the conical sphere. The Project Site has also been identified within Review Area 2 of the 2020 Draft ALUCP, which represents the area in which airspace protection and overflight notification policies are applicable. However, the ALUCP update has not yet been adopted.

Vehicle Miles Traveled

SB 743 creates a process to change the way that transportation impacts are analyzed under CEQA. Specifically, SB 743 required the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines to provide an alternative measure of effectiveness (MOE) for evaluating transportation impacts, which was done in early 2019. The Governor's Office of Planning and Research (OPR) recommends that vehicle miles traveled (VMT) become the primary metric or MOE of transportation impact across California. As of July 1, 2020, all CEQA lead agencies must analyze a project's transportation impacts using VMT. Humboldt County has not yet adopted VMT thresholds against which the Project would be compared.

CEQA Guidelines section 15064.3 states "*vehicle miles traveled" refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except projects for regarding roadway capacity, a project's effect on automobile delay shall not constitute a significant environmental impact*. This section goes on to state in b(3*) If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc*. it is a qualitative analysis that is being utilized in this impact determination.

GHD, on behalf of the applicant, has generated estimated Project VMT of the proposed project, as described below.

Assumptions to be used in VMT Analysis

VMT calculations are based on the inputs shown in the following tables. The analysis assumes 150employees and 300 daily commute trips (150 daily trips to work and 150 trips from work to home), and accounts for the share of commuters that do not generate VMT (walking, biking, etc.).

Non-VMT Generating Employee Commutes

In order to estimate the number of employee commute trips which are made via modes other thandriving, journey-to-work US Census data for Humboldt County was utilized to estimate the existingcommute mode share for the Project employees. Table 4-8 presents the Countywide average commute mode share percentage and the estimated number of Project employees by mode.

Table 4-8 Estimated Employees by Mode

Commute Mode	Percentage of Commuting	Number of Project Employees Anticipated to Use Mode
Drove Alone	71.8%	108
Carpooled	10.7%	16
Bus	1.7%	3
Walk	6.1%	9
Bicycle	2.7%	4
Worked from Home	7.0%	10
Total	100.0%	150

Source: Means of Transportation to Work (Universe: Workers 16+). From Table B08301 in the American Community Survey 5-year Estimates; 2015-2019, for Humboldt County, US Census.

It is estimated that a total of 26 employees (17.1% of Project employees) will use a travel mode that does not generate VMT (non-driving), and 124 Project employees will drive or carpool (82.9%) to work, conservatively. Therefore, the non-driving trips can be subtracted from the 300 total daily commute trips to estimate daily commute vehicle trips. Assuming two commute trips daily, this yields a revised total of 248 daily commute trips (300 – 52 = 248) that are estimated to be employees driving.

Impact Analysis

Impact assessment for Transportation relies upon the Transportation Impact Analysis Technical Memorandum prepared for the Project (GHD 2021e).

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (No Impact)

The Project would not involve any modification to existing roads in the vicinity of the proposed facility. Because no streets would be modified, there is no conflict with the

Circulation Element of the Humboldt County General Plan, the Humboldt Bay Area Plan, Humboldt County Code, or policy of the County of Humboldt. General Plan Policy CP-5 calls for the maintenance of a minimum level of service (LOS) on all County roads. The existing roadway network meets the required level of service and the Project does not represent an intensification of use beyond what the road network was designed to accommodate; therefore, there is no conflict. The operational traffic would be within the existing capacity of the local and state roadways. Construction traffic would be limited to ingress/egress of heavy equipment, material delivery and related support vehicles. Because the existing street network in the vicinity of the Project is designed to accommodate truck traffic, traffic control plan will not be necessary during the construction phase of the Project. Further, construction related vehicle trips such as off-hauling and materials delivery will not occur concurrently thereby reducing congestion at any given time. No impact would result.

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

15064.3, which relates to transportation impacts under CEQA, became applicable statewide until July 1, 2020. The updated Guidelines Section 15064.3, subdivision (b) lists the criteria for analyzing transportation impacts from proposed projects. The Governor's Office of Planning and Research (OPR) published a Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018).

Screening Threshold

According to the OPR Technical Manual, projects that generate fewer than 110 trips per day can be assumed to cause a less-than-significant transportation impact (OPR 2018). The proposed Project would include 150 employees that would create 300 total daily trips. This exceeds the 110 trip threshold, and, thus, this screening threshold is not applicable.

Threshold of Significance – 15% Reduction

The OPR Technical Advisory states that a commercial use that would result in a 15% or greater reduction in VMT on a per employee basis compared against the county-wide average VMT per employee basis can be assumed to cause a less-than-significant transportation impact.

Similarly, projects which achieve a VMT per employee of 15% or more below that of existing development can be considered to have less-than-significant impacts. OPR guidance states that a county is an appropriate geographical boundary for a baseline if that is the area within which workers of the project would be expected to live. Employees of the proposed project are expected to reside within the County of Humboldt, so countywide data was used to establish the baseline VMT per employee.

The Humboldt County Travel Demand Model (HCTDM) contains VMT information for the entire County and specific Traffic Analysis Zones (TAZs) within it. Caltrans District 1 staff was consulted to obtain the VMT information for the entire county as well as TAZ 307, the zone in which the project Site is located. The countywide average daily VMT per employee is 14.63 based upon HCTDM and is used as a baseline for this analysis. Applying OPR's guidance, an employee-based project generating a VMT that is 15 percent or more below this value, or 12.45 miles per employee per day or less, would reasonably have a less-than-significant VMT impact.

According to OPR guidance, new development in a low-VMT area that is of a similar nature to surrounding development in that area will likely result in a similar level of VMT. Given that

the project is comparable to surrounding industrial land uses on the Samoa peninsula, and that TAZ 307 exhibits a VMT of 10.22 or 30% below the regional average, it is reasonable to conclude that the project would exhibit below-threshold VMT per employee and therefore have less-than-significant VMT impacts.

For the purposes of transportation impact analysis under CEQA, heavy truck traffic (including freight traffic) is not to be considered 'vehicle miles traveled'. As described in the Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018), vehicle miles traveled refers to the amount and distance of automobile travel attributable to a project. The term "automobile" means on-road passenger vehicles, specifically cars and light trucks, and therefore can be attributed to employees of the site.

For the estimated 124 employees who will drive to work (248 daily commute vehicular trips), VMT for the Project was calculated using average trip distances to projected home origin locations. The percentage split of the locations is based on the 2019 US Census population relative to the County. The following Table 4-9 shows the estimated origins and distances of the commute trips, and the corresponding number of employees estimated to drive to work.

Table 4-9 Project Trip Distances for Employees Driving

Trip Origin	Distance to Project (miles)	% of Employees	# of Employees Driving
Samoa Peninsula	1.1 miles	5%	6
Eureka	4.9 miles	60%	74
Arcata	8.9 miles	20%	25
McKinleyville	15.5 miles	15%	19
Totals:	n/a	100%	124

Based on Table 4-9, a weighted average trip length was calculated to be 7.1 miles. This weighted average trip length was utilized to estimate Project-level VMT for the number of employees estimatedto drive to work, or 248 daily commute vehicular trips. The employee commute VMT was then divided by the number of total employees for the Project to estimate Project VMT per employee. The estimated VMT per employee that would be generated by the Nordic facility is shown in the following equation:

$$\text{Project VMT per Employee} = \frac{\text{\# of Daily Commute Vehicle Trips x Average Trip Length}}{\text{\# of Total Employees}}$$

$$\text{Project VMT per Employee} = \frac{248 \text{ x } 7.1}{150}$$

= 11.7 VMT per Employee Per Day

The 11.7 VMT is more conservative than the screening analysis from the HCTDM discussed above, but the numbers point to the same result. The 11.7 VMT is a 20 percent reduction from the Countywide average of 14.63. Both the screening number and the actual project calculation forecast more than a 15% reduction in VMT for the proposed project which indicates this is a less than significant impact. Additionally, transportation best practices incorporated into the Project by the applicant will would further reduce the calculated project VMT. These measures are described in Section 2.2 of the Project Description and include encouragement of ride-sharing and vanpooling, encouragement of on-site dining, working with the local transit authority to extend bus service to the site, and installing shower facilities and changing rooms to support employees that bike to work. Therefore, the impact is less than significant.

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

The existing road network that provides access to the Project Site does not contain sharp curves or dangerous intersections, and the Project would not result in changes to these features. The areas flat topography and low vegetation do not limit visibility at intersections. There are existing turn lanes/merge lanes on New Navy Base Road at LP Drive to facilitate in the ingress and egress of truck traffic. Further, as the Project is proposed in an existing industrial area, the road network has been designed to accommodate truck traffic. Truck traffic, employee, and emergency response apparatuses would be able to ingress and egress without creating a new hazard.

The two land uses present in the area are primarily industrial and residential. The vicinity of the Project Site is industrial, with residential uses of the town of Samoa to the north and Fairhaven and Finntown, located to the south of the site. Potential increases in traffic related to the Project would not affect the residential areas. Conversely, no Project element would result in increased residential traffic in the industrial areas. The impact would be less than significant.

d) Result in inadequate emergency access? (Less-than-Significant)

Construction-related traffic on the roads surrounding the Project will not substantially impede the existing traffic flows. Thus, emergency access via SR-255 and New Navy Base road would not be restricted. During the operation of the Project, the emergency access routes would remain in their existing configuration. The daily employee and freight traffic associated with the Project would not limit access to vehicles because the road network is designed to accommodate the expected traffic. The impact would be less than significant.

4.18 Tribal Cultural Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe,				
i) Listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k)?				✓
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.				✓

Impact Analysis

a i, ii) Cause a substantial adverse change in the significance of a tribal cultural resource? (No Impact)

The study area is termed the Area of Potential Effect (APE) in the accompanying cultural resources report and included the entire Project Site (Roscoe and Associates 2020). The APE is within the traditional territory of Wiyot Tribe, which once encompassed several hundred square miles extending from the Bear River Mountains in the south to the Little River in the north; and in general, the first mountain range crest to the east.

The Project Site is not listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k).

Consistent with the requirements of CEQA and the requirements of Public Resources Code section 21080.3.1, Humboldt County initiated consultation regarding tribal cultural resources pursuant to Assembly Bill (AB) 52 via letter on November 10, 2020, with the Bear River Band of the Rohnerville Rancheria, Blue Lake Rancheria, Cher-Ae Heights Indian Community of the Trinidad Rancheria, and the Wiyot Tribe. Although the Project Site is outside of the ancestral territory of the Yurok Tribe, the County held a preliminary consultation meeting with Yurok Tribe representatives on March 2, 2021, and a formal request for consultation was sent via email to the Yurok Tribe on March 3, 2021.

A request for consultation was received by the County on November 19, 2020 from Edwin Smith, Vice-Chairperson of the Bear River Rancheria Tribal Council. Following the request for formal AB 52 Consultation with the Bear River Band of the Rohnerville Rancheria, a formal meeting was held on December 9, 2020. No tribal cultural resources were identified, though questions regarding fish species, fish escape measures, and effluent discharge were raised. The County provided a follow-up letter to Vice-Chairperson Smith on February 9, 2021, as a formal response to the requested information and concerns raised in the consultation meeting. No additional comments have been provided to the County.

On November 24, 2020, the County received an email from Janet Eidsness, Tribal Historic Preservation Officer for the Blue Lake Rancheria, declining AB 52 consultation. A subsequent email from Ms. Eidsness received on December 13, 2020 confirmed there are no identified Tribal Cultural Resources on the subject project area.

The March 2, 2021 preliminary consultation meeting with the Yurok Tribe raised several concerns that are of importance to the Tribe, including fish species, fish escape measures, effluent discharge impacts, competition with commercial and Tribal fisheries, and aquaculture methods. County staff followed up by sharing the supporting technical studies prepared for the project, which are the basis for the related impact sections of this document. The County sent a follow-up letter to Executive Director Donald Barnes of the Yurok Tribe on April 9, 2021 concluding government to government consultation. No tribal cultural resources have been disclosed to the County, and a formal request for consultation has not been received.

On March 10, the County held a preliminary consultation meeting with the Wiyot Tribe to answer questions regarding the project. A formal request for consultation was not requested, and no tribal cultural resources were disclosed to the County by the Wiyot Tribe.

Based on the outcome of AB 52 consultation with the Bear River Band of the Rohnerville Rancheria, the Blue Lake Rancheria's declined offer for formal consultation, and the preliminary consultation meetings with the Yurok Tribe and Wiyot Tribe, no tribal cultural resources are known to occur within the Project area; therefore, no impact to tribal cultural resources will result.

4.19 Utilities and Service Systems

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

The industrial areas of the Samoa Peninsula, and specifically the Project Site, are well served by utilities because of the long history of high intensity industrial uses. The following subsections describe the existing utilities thematically.

Water

The Humboldt Bay Municipal Water District (HBMWD) provides wholesale and retail water services to the Samoa Peninsula. HBMWD maintains two separate pipeline systems delivering treated drinking water and untreated raw water to its customers in the area. HBMWD maintains a Capital Improvement Plan (CIP) to ensure that facilities and infrastructure are maintained and improved over time. These efforts have included projects on the Samoa Peninsula. The untreated raw water is currently supplied to industrial users on the peninsula. The domestic system is served by a 12-inch diameter, concrete-lined

transmission pipe that is routed down the peninsula, and then looped though a 27-inch diameter, steel pipeline under Humboldt Bay. The source of the water is the Mad River.

HBMWD also supplies raw (untreated) water to some industrial properties on the peninsula, including the proposed Project Site. A one million-gallon (1 MG) raw water storage tank, owned and operated by HBMWD, is located southwest of the Project Site, approximately 600 feet west of the Project Site between Vance Avenue and New Navy Base Road. The raw water transmission line is a 42-inch diameter, concrete-lined corrugated pipeline that ends approximately due east of the DG Fairhaven power plant. Lateral from the main water transmission lines already exist on the Project Site. Historically, this line served pulp mills on the peninsula; however, the majority of the industrial demand has since subsided.

Wastewater (Sanitary Sewer)

The only central sewer treatment system on the Samoa Peninsula is within the town of Samoa. There are two separate systems serving the existing houses. One system provides sewer collection, transport, treatment, and disposal to the majority of the houses and buildings. The second system provides sewer collection, transport, treatment, and disposal to approximately 25 homes and the Women's Club located along Sunset Avenue. Currently, the Samoa Pacific Group (SPG) owns, operates, and maintains both of the existing wastewater systems, which includes three large holding tanks, conveyance piping, pumping, a large holding reservoir/pond, and disposal percolation basin. The Peninsula Community Services District is in the process of designing and constructing a public wastewater treatment facility in the town of Samoa. Once operational, the facility would service the sanitary sewer requirements of the Project.

The Project Site and all residential and commercial/business properties within the communities of Fairhaven and Finntown are served through on-site, individual septic tank and leachfield systems that are each property owner's responsibility. The NCRWQCB has indicated that physical conditions that exist on the peninsula (high groundwater, coarse sandy soils, and small residential lots) make it infeasible for septic system discharges to meet water quality objectives set forth in the Water Quality Control Plan for the North Coast Region. Active industrial properties are served by on-site leachfields, which is the case for the Project Site.

Stormwater

The peninsula is made up of typically well-drained soils (coarse sands) and topographic features that do not require addressing runoff issues. No formal stormwater systems, other than a few drainage ditches on some of the industrial properties, are located between the railroad tracks and Humboldt Bay. Some of these industrial areas have storm drain catch basins and underground piping, most of which is not formally mapped, and are owned and operated by private property owners. The stormwater system on the Project Site would be significantly upgraded to meet applicable stormwater requirements and contain on-site all stormwater resulting from an event up to the 100-year event.

Solid Waste

Solid waste and recyclables pickup within the Samoa Peninsula is collected by Recology, which also has a recycling plant on the Samoa Peninsula. The County, through Humboldt Waste Management Authority (HWMA), has been trucking its solid waste approximately 175 miles to two out-of-county landfills. One third of this waste is shipped to Dry Creek Landfill

near Medford, Oregon under a long-term contract. The remaining two thirds of solid waste is hauled to the Anderson Landfill located near Redding, California. Dry Creek Landfill's projected operational life exceeds 100 years under any scenario. The Anderson Landfill is located at 18703 Cambridge Road in Anderson, California. The landowner is Waste Management of California, Inc., a subsidiary of Waste Management, Inc. The landfill's maximum permitted throughput is 1,850 tons per day. The remaining capacity is 11,914,025 cubic yards. The estimated closure date is 2055. Together, these two landfills would allow Humboldt County to meet its landfill disposal needs over the next 20 years.

Energy

Electricity is provided to the Samoa Peninsula by the Pacific Gas and Electric Company (PG&E). Power is transmitted to the Project Site through 115 kilovolt (kV) lines from the source to the PG&E substation located in Fairhaven. The power is then converted to be suitable for distribution via 12 kV overhead lines. Electricity is distributed via private lines and each structure has its own meter.

PG&E also provides natural gas to commercial users on the Samoa Peninsula through a pipeline under Humboldt Bay that begins near 14th Street in Eureka and ends south of Samoa near Bay Street. PG&E currently has a 4-inch steel natural gas service line located adjacent to the electrical substation at the Project Site. The gas line is not currently being utilized.

Impact Analysis

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (No Impact)

Water

The Project would use water from three sources. The aquaculture component of the Project would use a combination of seawater drawn from the Humboldt Bay (~10 MGD), untreated surface water from the Mad River (~2 MGD), and potable water (~0.5 MGD). The water needs of employees and fish processing would be met with potable water. Fire suppression needs, including both fire sprinklers and fire hydrants, would be met with untreated surface water via the 1 MG tank. All treated and untreated freshwater would be supplied by the HBMWD. As discussed in Section 4.10 - Hydrology and Water Quality, a will-serve letter was provided by the HBMWD on March 12, 2021, confirming the District has sufficient water to provide domestic water in the amount of 300,000 gallons per day and industrial non-potable water of 3 million gallons per day to the Project Site. According to the Urban Water Management Plan (HBMWD 2015), the District has estimated that demand up to 36 million gallons per day can be met reliably, even if the unprecedented conditions of continuous hydrology similar to the 1976-1977 drought occurred.

The seawater drawn from Humboldt Bay would be supplied by the Harbor District via an existing sea chest water intake, consisting of a screened marine intake and pumping infrastructure. Water-related utilities would not need to be relocated or expanded as a result of the Project. No impact would result.

Wastewater

The sanitary sewer needs of the Project would be discharged to the existing on-site leach field during operation of the first phase of the Project and to the future Samoa Wastewater Treatment Plant (WWTP) when the second phase of the Project is operational. The capacity of the leach field has a total capacity of 7,350 gallons per day. Current pre-Project usage is estimated to be between 363 gallons per day to 570 gallons per day based on existing usage at the Project Site related to other existing businesses. It is estimated that the 140 employees of the proposed facility will generate less than 900 gallons per day, leaving a minimum excess capacity in the domestic wastewater leach field of 5,880 gallons per day. Therefore, the wastewater utility requirements for the Project are within the existing capacity of the existing leach field system. Wastewater utilities would not need to be relocated or expanded as a result of the Project. No impact would result.

Stormwater Drainage

Stormwater drainage on the Project Site would be significantly upgraded to meet applicable standards for stormwater, as detailed in Appendix H. Stormwater from all events up to a 100-year event would be contained on the Project Site without discharge to Humboldt Bay. The Project's stormwater system would not impact any other public stormwater drainage facilities or other public resources in the vicinity. No impact would result.

Power

The Project includes the modernization and upgrading of the existing substation located near the Project Site. The upgrade would expand the total capacity of the switchyard to 35 MW to be utilized by the Project and adjacent industrial users. Connections to the new buildings would be made from the existing electrical switchyard located at the northwest portion of the site. Electrical utilities would be extended to the new buildings within multiple trenches or above-ground transmission lines. Electrical connections would extend from the existing switchyard to new transformer(s) to be installed from the switchyard adjacent to the new structures. The Project also includes the construction of a rooftop solar array that would be used to generate additional on-site power and to provide a back-up power source in the event of an emergency power outage.

The proposed upgrades would not necessitate an expansion of the regional network of transmissions facilities on the Samoa Peninsula and can therefore be considered within the existing capacity of service provider (PG&E). No electrical utilities would need to be relocated or expanded as a result of the Project. No impact would result.

Natural Gas

The existing 4-inch steel natural gas line that serves the Project Site is not currently being utilized. The proposed facility will tie into this line to supply natural gas turbine generators that will serve as the backup power supply in the event of a power outage. The backup power system will be able to generate approximately 20 MW of electricity to maintain critical equipment and infrastructure. Natural gas utility requirements for the proposed facility are within the existing capacity of service providers. Natural gas utilities would not need to be relocated or expanded as a result of the Project. No impact would result.

Telecommunications

Telecommunications would be provided to the Project via existing AT&T or Suddenlink infrastructure located near the Project Site. Telecommunications utility requirements for the proposed facility are within the existing capacity of service providers. Telecommunication utilities would not need to be relocated or expanded as a result of the Project. No impact would result.

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

The water used in the operation of the Project would come from Humboldt Bay (via the Harbor District sea chest) and the Mad River (via the HBMWD). HBMWD has a reliable support of water, even during drought years and has historically had an excess of available water. As explained in the Section 2.9 Water Intake Measures of the Project Description, the aquaculture operation can operate on freshwater, saltwater, or any mixture of the two. This ability reduces risks associated with water insecurity in times of drought emergency. In comparison to the water demands of the aquaculture component of the facility, the potable water needs of the approximate 140 employees is comparatively minor and are unlikely to be unmet, even in times of extreme drought. The water demands of the Project would not jeopardize the ability of HBMWD to meet water needs of other customers, as described in Section 4.10 – Hydrology and Water Quality. No impact would result.

c) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments? (No Impact)

During Phase 1 of the Project, the capacity of the existing leach field would have a total capacity of 7,350 gallons per day. It is estimated that the 140 employees of the proposed facility will generate less than 900 gallons per day of domestic wastewater, leaving a minimum excess capacity in the domestic wastewater leach field of 5,880 gallons per day. During Phase 2 of the Project, the planned Samoa Peninsula Wastewater Treatment Facility would have capacity to meet operational sanitary sewer needs. No impact would occur.

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

Construction of the Project would result in a temporary increase in solid waste disposal needs associated with demolition and construction wastes. To the greatest extent possible, construction materials existing on-site would be recycled and repurposed, which would significantly reduce the volume of construction waste. For materials that could not be re-used or recycled, construction wastes would include, but not be limited to, excavated soils and materials resulting from the demolition of existing structures. Construction waste with no practical reuse or that cannot be salvaged or recycled would be legally disposed of at a local transfer station. Active permitted in-County transfer stations include the Humboldt Waste Management Authority facilities in Eureka or Samoa, California and the Recology Eel River Transfer Station in Fortuna, California. Solid waste generated by the Project would represent a small fraction of the daily permitted tonnage of these facilities. This would be a

less than significant impact on landfill capacity with the implementation of federal, state, and local statutes and regulations related to solid waste. Therefore, the Project's construction-related solid waste disposal needs would be sufficiently accommodated by existing landfills, and the impact would be less than significant.

Following construction, Project operation would generate solid waste from the aquaculture operation and incidental trash from staff. The aquaculture process results in the creation of the following byproducts: dewatered sludge (feces and feed), processing coproducts (fish heads, guts, etc.), and dead fish (fish ensilage). The sludge is generated as a byproduct of the wastewater treatment process. The sludge is collected and stored in sealed tanks for regular out-shipment after which it would be recycled for other uses such as fertilizer, biogas, etc. The processing coproducts are sorted and stored in chilled sealed containers, maintained as food grade products, and shipped an ongoing basis from the facility by truck. It is estimated that the facility would produce between 8,000 to 12,000 metric tons of processing byproduct annually when fully operational. Fish ensilage are ground on-site and stored in an acid solution prior to being hauled off-site. Aquaculture byproducts present secondary use opportunities (e.g. soil amendment, cosmetic products) and would thus be unlikely to end up in the waste disposal stream. No operational impact would occur.

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

No applicable federal solid waste regulations would apply to the Project. At the State level, the Integrated Waste Management Act mandates a reduction of waste being disposed and establishes an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. The Project would not conflict with or impede implementation of such programs. Following construction, Project operation would not generate solid waste in excess of the capacity of local transfer stations. Therefore, no constructional or operational impact would occur.

4.20 Wildfire

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

For the purpose of this Section, the study area includes the Project Site and adjoining properties that could feasibly be impacted should a wildfire occur within the Project Site. The Project Site is located in a local responsibility area (LRA) meaning that it is in an area where local governments have financial responsibility for wildland fire protection (CalFire 2019). The Project is located approximately 2.3 miles from the nearest Federal Responsibility Area (FRA) and 3.7 miles from the nearest State Responsibility Areas (SRA). A portion of the Project Site is classified as having a "Moderate" fire hazard severity, which is the lowest category of fire hazard severity; the balance of the Project Site has no fire hazard ranking categorization (Humboldt County 2020).

Impact Analysis

a) Substantially impair an adopted emergency response plan or emergency evacuation plan? (No Impact)

A review of the Humboldt County Emergency Operations Plan (Humboldt County 2015) and the Tsunami Inundation Map for Emergency Planning – County of Humboldt (CGS 2020) indicates that the proposed facility would not impair emergency response activities nor

established evacuation routes. The relevant Tsunami Evacuation Route in this instance would be New Navy Base Road, allowing for evacuees to leave the Samoa Peninsula. The Project would not block or alter any roads or pedestrian ways within the Project vicinity. No impact would result.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? (Less-than-Significant)

The Project Site is surrounded by grass and shrub vegetation on approximately 80% of its perimeter and is generally flat. These grasses and shrubs could be susceptible to wildfire during Project construction or operation, as a result of accidental ignition. Small grass fires occur regularly on the Samoa peninsula, though the destruction of structures resulting from such fires is rare as they are typically extinguished quickly. Because of the large amount of surface paving (25.9 acres of the 35.6-acre lease area (Appendix H)), including internal circulatory roads, there are few instances where vegetation is located immediately adjacent to existing or proposed structures. In addition, dune restoration as required in the RMP (see Section 4.4.) would result in removal of European beach grass and other biomass, reducing the risk of grassland dune fires in restored dune environments and in limited areas around the proposed facilities. Hazardous materials located on-site during construction and operational phases would consist of vehicle-related fuels and lubricants and could be released to the environment as a result of a wildfire. The Project will meet all applicable state/local fire codes and will be fully compliant in providing new on-site fire hydrants as required. The resulting impact of hazardous materials released from the fire station would be less than significant.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? (No Impact)

Development of the proposed facility would not result in a need to expand infrastructure to the Project Site or within the vicinity of the Project. New roads for fire defense, expanded water sources, new power lines, or the development of other utilities would not be required. The Project Site and vicinity are not forested and the site is not located in a remote area. The eastern portion of the Project Site is bordered by the Humboldt Bay and as such pose no risk of fire. The local roads and New Navy Base Road serve as existing fuel brakes, as does the surrounding pavement and paved perimeter circulatory roads. The site is serviced by industrial water supply via Humboldt Bay Municipal Water District and emergency water sources exist on-site. No new power lines or other infrastructure would need to be built to supply the Project. No impact would result.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes? (No Impact)

The proposed facility would be located on a site with a very gentle slope (<2%) that poses no downstream flood or landslide risk. There is no tributary on the Project Site to cause or contribute to post-fire flooding or subsequent erosion or mass wasting. The Project Site is and would continue to be largely covered in impervious surface that would not erode. The area surrounding the Project Site could be susceptible to a grassland fire. However, the

facility would be protected by paved perimeter circulatory roads and on-site fire defense utilities required by building code, such as fire hydrants. In the event of a fire, post-fire slope instability or drainage changes would not occur, as the Project Site is nearly flat and does not include any natural drainages. No impact would result.

4.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		✓		
b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			✓	
c) Does the Project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?			✓	

a) Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? (Less-than-Significant with Mitigation)

As evaluated in this IS/MND, the Project would not substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; reduce the number or restrict the range of an endangered, rare, or threatened

species; or eliminate important examples of the major periods of California history or prehistory.

Although the Project will have temporary construction impacts and operational impacts to air quality, biological resources, cultural resources, paleontological resources, geology and soils, hydrology and water quality, and hazards, these impacts will be reduced to a less than significant level with implementation of the following Mitigation Measures:

- Mitigation Measure AIR-1: Best Management Practices to Reduce Air Pollution
- Mitigation Measure AIR-2: Best Management Practices to Reduce Asbestos Emissions During Demolition
- Mitigation Measure BIO-1: Implement Compensatory Mitigation for Loss of Dark-eyed Gilia
- Mitigation Measure BIO-2: Protect Special Status Terrestrial Mammals
- Mitigation Measure BIO-3: Protect Special Status Bats
- Mitigation Measure BIO-4: Protect Special Status Amphibians
- Mitigation Measure BIO-5: Protect Special Status, Migratory, and Nesting Birds
- Mitigation Measure BIO-5a: Limits on Soil Densification Construction to Avoid Impacts to Marine Mammals
- Mitigation Measure BIO-6a: Implement Compensatory Mitigation for Sensitive Natural Communities
- Mitigation Measure BIO-6b: Protection of ESHA
- Mitigation Measure CR-1: Implementation of Protocols for Cultural Monitoring During Ground Disturbance
- Mitigation Measure CR-2: Implementation of Inadvertent Discovery Protocols
- Mitigation Measure CR-3: Minimize Impacts to Unknown Archaeological Resources or Human Remains if Encountered
- Mitigation Measure GEO-1: Implement Geotechnical Design Recommendations
- Mitigation Measure GEO-2: Construction Best Management Practices
- Mitigation Measure GEO-3: Inadvertent Discovery of Paleontological Resources
- Mitigation Measure HAZ-1: Implement Recommendations of Interim Measures Work Plan
- Mitigation Measure HWQ-1: Implement Stormwater Protection Prevention Plan (SWPPP)

With incorporation of the mitigation measures listed above, construction impacts will be reduced to a less than significant level. As evaluated in this IS/MND, operation of the Project will not substantially degrade the quality of the environment. The impacts will be less than significant with mitigation.

b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the

effects of past projects, the effects of other current projects, and the effects of probable future projects)? (Less-than-Significant)

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

Efforts to identify cumulative projects included outreach to the Humboldt County Planning Department, Humboldt County Department of Public Works, the California Coastal Commission, and the Harbor District.

The Humboldt County Department of Public Works reported no known projects to be considered under cumulative effects with proximity to the proposed Project.

The California Coastal Commission also reported no known projects and referred future inquiry to the agency’s online archive of meeting agendas. The archive was searched for relevant recent and contemporary projects; no additional projects were identified.

Projects reported by the Humboldt County Planning Department and the Harbor District are summarized in Table 4-11 Projects Considered for Cumulative Impacts and considered in the cumulative impact analysis.

Existing permitted users of the RMT II Outfall also considered for cumulative impact analysis include:

- DG Fairhaven Power, LLC (Order No. R1-2018-0013); and
- Peninsula Community Services District and Samoa Pacific Group Town of Samoa Wastewater Treatment Facility (Order No. R1-2020-0005).

Table 4-10 Projects Considered for Cumulative Impacts

Project Name	Project Summary	Estimated Construction Schedule	Project Location
Harbor District Mariculture Development Program	Various Harbor District-led projects to support commercial fisheries. See below for detailed project list.	Ongoing	Various
NPDES permit for DG Fairhaven Power, LLC (Order No. R1-2018-0013)	Existing permitted discharge of 0.350 MGD of 40 MGD capacity via the RMT II ocean outfall	Discharge is active. No additional construction	Samoa, CA. Discharge occurs in the same location as the planned discharge from the Project.
NPDES permit for Peninsula Community Services District and Samoa Pacific Group Town of Samoa Wastewater Treatment Facility (Order No. R1-2020-0005)	Future permitted discharge of 0.0756 MGD of 40 MGD capacity via the RMT II ocean outfall	Discharge would be active after the construction of the Peninsula Community Services District Wastewater Treatment Facility	Samoa, CA. Future discharge would occur in the same location as the planned discharge from the Project
Peninsula Community Services District Samoa Peninsula Wastewater Treatment Facility	Construction of the new facility would collect and treat wastewater from Samoa and Fairhaven, CA. After treatment, effluent would be discharged via the NPDES permit (see above) via the RMT II ocean outfall	Construction would commence no sooner than 2022 and possibly later, pending funding and permitting approvals	The collection system would extend throughout Fairhaven and Samoa, CA. The treatment facility would be located in Samoa, CA.
Speculative fiber optic off-shore cable landing project	An off-shore fiber optic cable would cross the sea floor and land in or near Samoa, CA	Unknown	Unknown location in or near Samoa, CA

Project Name	Project Summary	Estimated Construction Schedule	Project Location
Samoa Town Improvements	A Coastal Development Permit has been issued by Humboldt County for components of the Samoa Town Master Plan, including demolition of buildings, remodeling the Cookhouse, constructing a campground and cabins, upgrades to the maritime museum, and other improvements	Construction would occur in 2021	Samoa, CA, approximately one mile north of the Project Site
Manila Shared Use Pathway Project along Highway 255	Paved shared-use pathway adjacent to Highway 255 in Manila extending approximately one mile. See below for more detail.	Construction would occur in 2021	Manila, CA approximately two miles north of the Project Site.
Speculative future off-shore wind projects.	Future off-shore wind projects may require land-based infrastructure in or near Samoa, CA	Unknown	Unknown

Harbor District Mariculture Development Program

The closure of pulp-mills on Humboldt Bay's Samoa Peninsula created a need to repurpose the area for other industries. The Humboldt Bay Harbor District has recognized that the availability of land, freshwater, saltwater, and power makes the area well suited for aquaculture and facilities to support commercial fisheries. As such, the Harbor District has invested in permitting and development of infrastructure required for growth of these industries. Notable past and current efforts include:

Humboldt Bay Mariculture Pre-Permitting Project. This project resulted in twenty subtidal acres along the Samoa Peninsula being permitted for shellfish and seaweed culture. This area is being leased to private, non-profit and academic entities for commercial and research aquaculture projects. Efforts are underway to similarly permit intertidal areas in Arcata Bay for commercial oyster culture. This project was initially funded by the County of Humboldt Headwaters Fund and Harbor District.

Bay Water Intakes (Sea Chest). The Bay Water Intake project (also known as the sea chest) supports the mariculture industry by providing a source of bay water for land-based aquaculture facilities. The Harbor District is in the process of permitting water intakes at the Redwood Marine Terminal II and Red Tank Docks. Existing water intake structures that were used by pulp mills will be improved and expanded at both locations. Bay water will be made available to current and future tenants to support various aquaculture operations.

Private entities have expressed interest in using the water for finfish culture, shellfish seed setting facilities, kelp hatcheries, and seaweed tumble culture. The Harbor District has consulted with regulatory agencies regarding the proposed water intakes. Based on the discussions, intake screens have been designed to minimize potential entrainment or impingement of aquatic organisms. Additionally, the Harbor District has contracted a consulting firm to develop a model that will assess impacts to larval fish ("Impact Assessment Model"). The model results will inform that project's CEQA Mitigated Negative Declaration. However, field sampling and further analysis of fish larvae may be required for permitting. The Harbor District is currently identifying habitat restoration options that will serve as mitigation for project impacts. It is anticipated that the CEQA process will be complete in June 2021.

Redwood Marine Terminal I Hagfish Facility. Humboldt Bay supports a live hagfish fishery. A live-fish holding facility was previously located at Fields Landing in South Humboldt Bay. When the Harbor District was informed that the infrastructure to support that facility was failing, they permitted a water intake and related infrastructure at Redwood Marine Terminal I, on the Samoa Peninsula. The owner/operator of this facility has changed, but it remains active under the Harbor District's permits. The Harbor District has also installed a crane and improved the dock to support the live-fish holding facility and other fisheries activities at the site.

Redwood Marine Terminal II Aquaculture Business Park Studies and Development. Upon acquiring Redwood Marine Terminal II, the Harbor District commissioned studies by the Freshwater Institute, Aqua-Terra & Associates, and Professional Aquaculture Services to assess repurposing the site for aquaculture. These studies identified opportunities and constraints for aquaculture, but generally supported that aquaculture development has merit. As a result, the Harbor District has continued to market the site for aquaculture and has improved the site's infrastructure. The Harbor District has established aquaculture related leases with Taylor Mariculture, Pacific Seafoods, and Nordic Aquafarms. Taylor Shellfish and Pacific Seafoods have received regulatory approvals for aquaculture and Taylor Shellfish has ongoing aquaculture operations. Negotiations are underway with other entities that are interested in shellfish and seaweed culture at the site. The Harbor District is working with these entities to help navigate regulatory and logistical requirements for aquaculture development.

Redwood Marine Terminal II Permitting. The District has acquired the following County of Humboldt Coastal Development Permits (CDP) and Conditional Use Permits (CUP) related to aquaculture:

- CDP 16-049 and CUP 16-06. Allow interim uses, aquaculture, coastal dependent, coastal related, heavy industrial, research/light industrial and other uses allowed under the interim use provision of the Humboldt Bay Area Plan. Also, the permits specifically approved the Plan of Operation for two aquaculture business tenants.
- CDP 18-041, CUP 18-048. Allow interim uses that comply with the provisions of the Humboldt Bay Area Plan. The use of the existing buildings and open yard areas for aquaculture and coastal dependent industrial uses that could include aquaculture (shellfish and finfish culture and processing facilities). The permits require that these principally permitted uses utilize existing warehouse and other site facilities with no changes to size, shape, and capacity of building or infrastructure. The permits allow the Harbor District to execute leases with future tenants to occupy the building areas subject to conformance review by the Planning Director.

- CDP 15-043, CUP 15-014, AA 18-002. Allow installation of a saltwater well.

The Manila Shared Used Pathway and improvements in the town of Samoa are located a mile or more north of the Project Site and beyond the Project Study Boundary for biological resources. Neither project would result in an impact to water quality in Humboldt Bay or the Pacific Ocean. Given the distance between these projects and the proposed Project, noise and other impacts would not be cumulative. Neither project would result in population growth or additional demand for public services. These projects are not considered further for cumulative impacts. An analysis of potential cumulative impacts for the remaining projects summarized in Table 4-10 is provided below.

Aesthetics

As discussed in Section 4.1 – Aesthetics, the Project would have a less than significant impact of the existing visual character of the Project Site and surrounding area. Neither of the two permitted NPDES discharges through the RMT II ocean outfall would result in an impact to aesthetic resources.

Mariculture operations resulting from mariculture leases would be visible in Humboldt Bay from boat traffic only. Mariculture operations are present throughout Humboldt Bay and are integral to the existing visual character of the fishing community. Additional mariculture operations, combined with the proposed Project's less than significant impact to visual resources, would not result in a cumulative aesthetic impact.

Construction of the wastewater treatment facility would have a low elevation profile and would not be visible from the Project Site, or vice versa. Construction of the wastewater treatment facility and associated collection system would result in short-term visual impacts resulting from ground disturbance and the presence of heavy equipment. Give construction of Phase 2 of the Project is dependent on an operation wastewater treatment facility in Samoa, construction of both facilities would not occur simultaneously, and no cumulative impact related to construction would occur.

Specifications surrounding the speculative fiber optic cable landing and off-shore wind project(s) remain unknown, including details regarding any potential land-based infrastructure that could result in a cumulative visual impact. Given the speculative nature of both projects, it is assumed construction would be most likely to occur after the proposed Project was fully constructed and operational. Both speculative projects would need to comply with land use and zoning on the Samoa Peninsula and would thus most likely be sited on property zoned for Industrial or Coastal Dependent Industrial uses where infrastructure associated with utilities and wind power would be considered an anticipated allowable use.

Any cumulative impact to aesthetics, both resulting from construction and operations, would be less than significant.

Agriculture and Forest Resources

As discussed in Section 4.2 – Agricultural and Forest Resources, the Project would not result in an impact to any lands zoned or used for agricultural or forest resource purposes. Thus, no cumulative impact would result.

Air Quality, Greenhouse Gas Emissions, and Energy

By their nature, air pollution, greenhouse gas emissions, and energy usage are largely cumulative impacts. As discussed in Section 4.3 – Air Quality, with incorporation of Mitigation Measure AIR-1 and AIR-2, the Project will not conflict with or obstruct applicable air quality plans or exceed NCUAQMD's stationary source thresholds of significance for criteria air pollutants. A project that will not exceed the NCUAQMD's thresholds of significance on a project level also will not be considered to result in a cumulatively considerable contribution to these regional air quality impacts. This impact will be cumulatively less than significant.

As described in Section 4.8 – Greenhouse Gas Emissions and specifically in Table 4-6, any increases in Project-related greenhouse gas emissions will not exceed the EPA's Greenhouse Gas Reporting Program reporting threshold for 'large' industrial sources. Additionally, as shown in Table 4-7, the Project would not impede the state in meeting Assembly Bill 32 (AB 32) greenhouse gas reduction goals. Therefore, the Project's contribution to cumulative greenhouse gas impacts will not be cumulatively considerable, and therefore will be less than significant.

As discussed in Section 4.6 – Energy, construction will not encourage activities that will result in the use of large amounts of fuel and energy in a wasteful manner. Operation of the Project will utilize fuels from the movement of employees and incoming/outgoing trucks, consistent with normal functioning of a typical production facility. The Project will utilize photovoltaic panels and fish-generated waste heat to supplement its energy supply and to reduce energy needs, respectively. The operation of the Project will not result in inefficient, wasteful, or unnecessary consumption of fuels or other energy resources. Therefore, the Project's contribution to cumulative energy impacts will not be cumulatively considerable, and therefore will be less than significant.

Biological Resources

As discussed in Section 4.4 – Biological Resources, existing NPDES permits for Fairhaven Power and the Samoa Wastewater Treatment Facility would also result in discharge of treated effluent through the RMT II outfall into the Pacific Ocean. While these two additional discharges would be significantly smaller in volume than the Project's proposed discharge, the sum could be cumulative, potentially effecting marine biological resources. However, all three dischargers would be independently responsible for complying with the Ocean Plan, Thermal Plan, NPDES permit conditions, and ongoing operationally monitoring to verify compliance. The RMT II outfall has a total capacity of approximately 30 MGD. Combined, the three permitted uses would sum to less than half of the total capacity of the RMT II outfall and well under the total volume intended for discharge into the Pacific Ocean. In addition, when evaluating issuance of the NPDES permit, the NCRWQCB would also consider and evaluate potential cumulative impacts resulting from the combined discharges from the RMT II outfall. Given operational compliance monitoring would be required for all three dischargers, including Project discharge, any potential impact would be less than significant.

Mariculture operations would occur within Humboldt Bay in tidal and sub-tidal areas near the Project Area. As the Project would not have any biological impact on Humboldt Bay (in-water work would not occur and water quality would be protected from construction and operational stormwater impacts), no cumulative impact to Humboldt Bay would result.

Construction and operation of the Samoa Wastewater Treatment Facility would be located in the town of Samoa and outside the biological PSB, with all biological impacts mitigated. Thus, a cumulative biological impact would not result. However, construction of the below-grade collection system would extend near and onto the Project Site. Construction of the collection system could occur within a similar timeframe as construction of Phase 2 of the Project, resulting in a potential cumulative impact. However, collection system construction would be short-term in duration and include limited earth work activities (e.g. trenching) inclusive of BMPs for erosion control, water quality protection, air quality protection, nesting birds, and other standard measures required for development within the coastal zone. Neither project would impact the waters or water quality of Humboldt Bay. In fact, the collection system would improve water quality in Humboldt Bay by resulting in an abandonment of leach fields, which degrade water quality in Humboldt Bay. Given the collection system would include BMPs and other permit conditions for purposes of resource protection, any cumulative impact would be less than significant.

Details of potential future off-shore wind projects and a speculative off-shore fiber optic cable landing remain unknown; however, either project could result in potential biological impacts to marine resources. Terrestrial components of either project could also result in potential biological impacts. However, neither project is reasonably certain to occur; the location of the projects is unknown; and the scope and scale of the projects remains undefined. As a result, analysis of potential cumulative impacts that could result from a speculative off-shore fiber optic cable landing or off-shore wind projects is not possible.

Cultural Resources

As discussed in Section 4.5 – Cultural Resources, record searches and field review visits were undertaken to ensure that cultural resources and human remains that could be inadvertently impacted by Project implementation were identified and mitigation measures are included that would reduce impacts to a less-than-significant level. Projects considered in Table 4-10 would, at minimum, also be required to comply with CEQA and undergo consultation with tribal governments through AB 52. As such, projects considered in Table 4-10 would also complete cultural resources investigations or similar studies, as well as require similar mitigation measures, to ensure cultural impacts would not result from the site-specific footprint of any one project. With implementation of Mitigation Measures CR-1 (Implementation of Protocols for Cultural Monitoring During Ground Disturbance); CR-2 (Implementation of Inadvertent Discovery Protocols); and CR-3 (Minimize Impacts to Unknown Archaeological Resources or Human Remains if Encountered), the Project's contribution to this cumulative impact will not be cumulatively considerable, and therefore less than significant.

Geology and Soils

The nature of most geologic impacts are site-specific, with the exception of erosion of sediment. As discussed in Section 4.9, with incorporation of Mitigation Measures GEO-1 and GEO-2,, erosion and sedimentation would be managed to avoid a significant adverse impact to the environment. Therefore, most geologic hazards do not accumulate. By implementing Mitigation Measure GEO-1, the Project would be designed and constructed in compliance with the site-specific recommendations made in the Project's geotechnical reports. With compliance with the recommendations of the Project-specific geotechnical report and applicable state and local regulation and policies, the Project's geologic-related

impacts (limited to the Project Site) would be less than significant. Because of the localized nature of geologic and soil impacts, no significant cumulative impacts would result.

Hazards and Hazardous Materials

If Project impacts were to overlap with those from the projects listed in Table 4-10, the cumulative effect of the Project plus cumulative projects could be significant. As discussed in Sections 4.7, 4.9, and 4.10 above, the Project would adhere to Mitigation Measures GEO-2, HAZ-1, and HWQ-1, which include construction BMPs and implementation of recommendations from the Interim Measures Work Plan, and implementation of a SWPPP. Existing soil and groundwater contamination on the Project Site is site-specific and would not combine with another project to result in a cumulative impact. With implementation of required mitigation measures, the Project's contribution to this cumulative impact would not be cumulatively considerable and therefore less than significant.

Hydrology and Water Quality

As discussed in Section 4.10 – Hydrology and Water Quality, existing NPDES permits for Fairhaven Power and the Samoa Wastewater Treatment Facility would also result in discharge of treated effluent through the RMT II outfall into the Pacific Ocean. The Project's discharge of treated effluent would not result in a significant impact to marine water quality. However, while the two additional discharges would be significantly smaller in volume than the Project's proposed discharge, the sum could be cumulative, potentially affecting marine water quality. Given operational compliance monitoring would be required for all three dischargers as regulated by the NPDES unit of the NCRWQCB, including Project discharge, any potential impact would be less than significant.

Of all the projects considered in Table 4-10, only the mariculture operations would involve the waters of Humboldt Bay. All other projects, including the proposed Project, would not include in-water construction or operations and would not otherwise involve Humboldt Bay. Standard BMPs would be required of all projects to ensure potential water quality in Humboldt Bay was not impacted as a result of indirect construction impacts related to sediment or accidental release of hazardous materials. Operationally, all stormwater from the proposed Project would be retained on-site for all events up to the 100-year event thus, discharge of stormwater, including pollutants, to Humboldt Bay would not occur. The potential cumulative impact to Humboldt Bay water quality resulting from both construction and operation would thus be less than significant.

Land Use and Planning

As discussed in Section 4.11 – Land Use and Planning, the Project would be consistent with applicable land use and zoning requirements and is a principally permitted coastal industrial use. Existing and proposed development near the Project vicinity are required to comply with the land use and zoning regulations set forth by the in the Humboldt Bay Area Plan and Humboldt County Code, as well as additional regulatory requirements. The Project would not result in an impact to land use and planning; thus, a cumulative impact would also not result.

Mineral Resources

As discussed in Section 4.12 – Mineral Resources, the Project would not significantly impact mineral resources. The Project would require importation of some mineral materials (e.g., aggregate rock and other construction materials) to facilitate construction of the aquaculture

facility. However, mineral resources would not be significantly depleted as a result. Construction of the Samoa Wastewater Treatment facility and associated collection system would also require importation of rock and similar construction materials; however, neither project would require an excessive use of rock relative to other typical construction projects. Given the speculative nature of the potential off-shore fiber optic cable landing and off-shore wind project, it is difficult to evaluate what potential mineral uses may be required for the terrestrial components of either development. Any potential cumulative impact would be less than significant.

Noise

As discussed in Section 4.13 – Noise, the Project would generate construction noise. There are no sensitive noise receptors within the vicinity of the Project Site. Operational noise would be limited to primarily vehicular noise and is not considered impactful. The closest noise generating projects listed in Table 4-10 involve the construction of the collection system for the Samoa Wastewater Treatment Facility. Other projects listed in Table 4-10 would not generate noise (e.g., marine discharge under the NPDES program) or are located sufficiently afar from the Project Site as to be noise independent, including improvements in the town of Samoa or construction of the Samoa Wastewater Treatment facility itself. Construction of the collection system would be located on and near the Project Site and require standard construction techniques including excavation, trenching, and grading to install new sub-surface sewer piping and associated infrastructure; pile driving or similar construction methods known to generate extremely high levels of noise are not anticipated. Construction of the collection system within the vicinity of the Project Site would be short-term in duration. Given there are no sensitive noise receptors and a noise-related impact would not result from either the proposed Project or the construction of the collection system for the Samoa Wastewater Treatment Facility, the Project's contribution to cumulative construction noise impacts will not be cumulatively considerable, and therefore will be less than significant.

Population and Housing

As discussed in Section 4.14 – Population and Housing, the Project would not result in an impact to population and housing; thus, a cumulative impact would not result.

Public Services

As discussed in Section 4.15 – Public Services, the Project would not result in an impact to public services; thus, a cumulative impact would not result.

Recreation

As discussed in Section 4.16 – Recreation, the Project would not result in an impact to recreation; thus, a cumulative impact would not result.

Transportation

As described in the Section 4.17 – Transportation, the traffic generated by the Project will be consistent with the site's historic and continued use as coastal-dependent industrial operations. The project's quantitative VMT analysis indicates the potential impact related to VMT would be less than significant. Of the projects considered for cumulative impacts, none propose alterations to the road segments and intersections utilized by the Project. Additionally, none of the projects are likely to generate operational automobile or truck traffic

that would exceed the existing capacity of the road network because they do not result in changes of land use. Any construction related traffic generated by nearby terrestrial projects occurring at the time of Project construction is unlikely to affect the Project because they are located at least a mile away from the Project Site Boundary. Therefore, a cumulative transportation impact would not result.

Tribal Cultural Resources

As discussed in Section 4.18 – Tribal Cultural Resources, the Project would not result in an impact to tribal cultural resources; thus, a cumulative impact would not result.

Utilities and Service Systems

As summarized in Section 4.19 – Utilities and Service Systems, the Project would not result in an impact or a need to expended utilities and service systems, including water, wastewater, electrical power, or telecommunications. Stormwater upgrades on the Project Site would not retain stormwater on-site and would not result in an impact or service demand increase to any other public (or private) stormwater infrastructure on the Samoa Peninsula.

The Project would generate solid waste and recyclable materials within the capacity of existing local solid waste and recycling disposal facilities. The other projects considered in Table 4-10 would also inevitably generate some level of solid waste and recyclable materials that would also be transported to existing local solid waste and recycling disposal facilities. The combined solid waste and recyclable materials generated from all the projects would not require an expansion of local solid waste and recycling disposal facilities. Any potential cumulative impact would be less than significant.

Wildfire

As discussed in Section 4.20 – Wildfire, a grassland fire could occur at the Project Site, resulting in a potential exposure of pollutants. The other terrestrial-based project considered in Table 4-10 is the Samoa Wastewater Treatment Facility, could also result in the potential exposure of pollutants as a result of a grassland fire on the Samoa Peninsula. Both projects would be largely paved and have ample defensible space against a grassland fire. Both projects would be required to employ applicable fire prevention requirements. In addition, both projects would be served by the PCSD Fire Department in the event a grassland fire. Any cumulative impact would remain less than significant.

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

The Project has been planned and designed to avoid significant environmental impacts. As discussed in the analysis throughout Section 4 of this IS/MND, the Project would not have environmental effects that would cause substantial adverse direct or indirect effects on human beings.

The Project Site is located within the mapped Tsunami Inundation Area on the “Tsunami Inundation Map for Emergency Planning, Eureka Quadrangle” (CGS 2009 cited in SHN 2020). If a large earthquake were to occur on the Cascadia Subduction Zone, the Project Site, and entire North Spit would be subject to tsunami inundation. The travel time of the first tsunami wave will be very short, arriving soon after strong ground shaking has ceased and will leave little time to evacuate to higher ground (SHN 2020).

As discussed in Section 4.9 – Hazards and Hazardous Materials, in the event of a large seismic event, all facility staff will move to the designated TVERS and wait for an all clear to be issued by County officials. An area within Phase 1 of the project will be designed as the TVERS. Per ASCE 7-16, such buildings are to be designed in accordance with ASCE 7 Section 6.14 to achieve tsunami resilience and reliability of occupancy. The entire facility will be designed to meet all applicable tsunami design standards including the effects of sea level rise and potential land subsidence in a seismic event. In excess of the standard design requirements, the TVERS area and fish containment infrastructure will utilize the Maximum Considered Tsunami (MCT) with a 2% probability of being exceeded in a 50-year period, the equivalent to a return period of approximately 2,500 years (Martin & Chock 2020) to ensure the safety of staff and ensure fish containment. The TVERS area will be located not less than the greater of 10 ft or one-story height above 1.3 times the Maximum Considered Tsunami inundation elevation in the most appropriate structure. Appropriate emergency supplies will be maintained for peak occupancy in the TVERS.

Currently there are not any occupied structures in the area of the RMT II facility that would meet the design requirements ASCE 7 Section 6.14 for a TVERS. Due to a lack of TVERS areas on the peninsula and the limited time to evacuate the tsunami hazard zone following an event, the TVERS area would be open to anyone in the area following a large seismic event or tsunami warning, thus decreasing the risk to human life in the area.

The cumulative impact would be less than significant.

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Appendices

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Appendix C
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Appendix E
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Appendix F
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Appendix G
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Appendix J
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Appendix K
Restoration and Monitoring Plan

Appendix L
Supplemental Soils and Anthropogenic Disturbance Investigation of Potential ESHA Memo

Appendix M
Applicant Provided Project Description