Initial Study and Draft [Mitigated] Negative Declaration

Dahan Use Permit for Recreational Vehicle Park

UP2601C

February 9, 2026



Prepared By

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Project Information Summary

1.	**Project Title:**	Dahan Use Permit for a Recreational Vehicle Park UP2601C
2.	**Lead Agency Name and Address:**	Del Norte County Planning Commission 981 H Street, Suite 110 Crescent City, CA 95531
3.	**Contact Person and Phone Number:**	Karina Timmer (707) 464-7254 k.timmer@co.del-norte.ca.us
4.	**Project Location and APN:**	16850 U.S. Highway 101 North Smith River, CA 95567 APN 101-070-022
5.	**Project Sponsor's Name and Address:**	Daniel H. Dahan 4255 Cedar Avenue Long Beach, CA 90807
6.	**County Land Use:**	Visitor-Serving Commercial (VSC)
7.	**County Zoning:**	Commercial Recreation (CR) With Coastal Access and Hazard Combining Districts

8. Description of Project:

Lee Tromble, on behalf of property owner Daniel Dahan, has submitted an application for a conditional use permit to allow development of a small recreational vehicle (RV) park consisting of four park model guest lodging units. The project site is located in the Smith River area of Del Norte County, just south of the Oregon border, west of U.S. Highway 101.

The parcel encompasses approximately 0.7 acres of primarily flat bluff-top land, as well as the coastal bluff face and sandy beach below. The project proposes four park model units to be utilized as short-term visitor-serving accommodations. The units would be located along the western edge of the bluff-top portion of the site. Each unit would include a deck, as well as a detached, stick-built structure intended to function as a bedroom and bathroom. All structures would be located at least 16 feet from the top of the bluff.

The site is located within the California Coastal Zone and is governed by the Del Norte County Local Coastal Program (LCP). The property carries a General Plan land use designation of Visitor-Serving Commercial and a zoning designation of Commercial Recreation. Recreational vehicle parks are permitted within the Commercial Recreation zone subject to approval of a conditional use permit.

The project site is bounded by U.S. Highway 101 to the east and the Pacific Ocean to the west. The northern boundary abuts Pelican State Beach, which includes a loop drive and a public access trail. White Rock Resort, an existing park model RV park under the same ownership, is located to the south. The parcel contains a beach access trail that is identified on a recorded parcel map for the use and benefit of both the resort parcel and the subject parcel. East of the site, across U.S. Highway 101, is another parcel owned by the applicant that contains an existing multi-unit building and

has recently been approved for a five-unit RV park. Additional residential development is located further north and south along U.S. Highway 101, as well as the California Agricultural Inspection Station to the north.

The site is currently developed with a vacant restaurant building known as the former Nautical Inn, which has been unoccupied for several years and is in a state of disrepair. The project proposal includes demolition of the existing structure down to the foundation, as well as removal of surrounding hardscape associated with the former restaurant parking area. Demolition activities would be conducted from the east side of the structure to avoid impacts to the coastal bluff. Existing reinforced masonry walls defining the bluff edge would remain in place, and foundation elements near the bluff face would be retained. Excavated materials would be stockpiled on existing paved areas as far from the bluff as feasible and removed in a timely manner. Standard construction best management practices would be implemented to control dust, erosion, and runoff.

Vehicle access to the site is currently provided via White Rock Loop, which connects to U.S. Highway 101 and extends south through the adjacent White Rock Resort property. The project proposes a minor realignment of internal circulation to accommodate a proposed on-site wastewater disposal system, resulting in a counterclockwise loop road configuration around the system. Access would remain ungated, and the project would require an updated Caltrans encroachment permit for access to U.S. Highway 101.

Water service would be provided by the Smith River Community Services District, which has confirmed availability of an adequate service connection. Wastewater disposal would be provided by a proposed Wisconsin mound on-site sewage disposal system, consisting of two 1,500-gallon septic tanks with an effluent pumping system, designed for an estimated wastewater flow of approximately 800 gallons per day.

The project would provide four on-site parking spaces, one for each lodging unit, consistent with Del Norte County Code parking requirements for rooming and lodging uses.

9. Surrounding Land Uses and Settings:

The project site is bordered to the north by Pelican State Beach, which provides a public access trail to the sandy beach below. Both the General Plan land use designation and the zoning district for the beach is Public Facility. East of the project location, across Highway 101, is the former Pelican Beach Inn and a single-family residence. The former inn property is zoned Commercial Recreation, with an underlying land use designation of Visitor-Serving Commercial. It is currently developed with a manager's quarters and three motel units contained within a single building. It is under the same ownership as the subject parcel, and a Use Permit for a five-space RV park utilizing park model RVs was approved by the Del Norte County Planning Commission in August 2025. The single-family residence has a zoning designation of Rural Residential and Agriculture, three-acre minimum (RRA-3), and a General Plan land use designation of Rural Residential, allowing one dwelling unit per three acres (RR1/3). South of the parcel is White Rock Resort, an RV park developed with park model RVs and also owned by the applicant. The resort property is zoned CR and the General Plan land use designation is VSC. West of the subject property is the Pacific Ocean.

10. Required Approvals: Use Permit – Del Norte County Planning Commission

11. Other Approval (Public Agencies): California Housing and Community Development – RV Park Permit
Caltrans – Encroachment Permit

12. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

Native American tribes traditionally and culturally affiliated with the project area were notified of the completed application and the beginning of the AB 52 consultation period pursuant to PRC §21080.3.1. Notification of the beginning of the AB 52 consultation period was provided on January 8, 2026. On February 9, a Tribal Heritage Preservation Officer from the Tolowa Dee-ni' Nation responded with the following comment: "The proposed project is in a sensitive cultural/archeological site. The Nation requests that a tribal cultural monitor be present for portions of the project implementation. This can be coordinated through the Nations THPO." This comment has been incorporated into this document, under both the Cultural Resources and Tribal Cultural Resources sections.

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" without mitigation as indicated by the checklist on the following pages. All mitigation measures are provided in the Mitigation Monitoring and Reporting Program.

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

Determination

On the basis of this initial evaluation:

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

_____ _____

[Planner Name] Date

Position Title

Environmental Checklist

1. Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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 public views of the site and its surroundings? (Public views are those that are experienced from publically accessible vantage points). 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?	☐	☐	☒	☐

Discussion of Impacts

a. **Less Than Significant**: The proposed project is on the west side of Highway 101 in Smith River, CA. This portion of the highway, from the Oregon border south to the mouth of the Smith River, is identified as a "view corridor" in the Visual Resource Inventory of the County's Coastal Element Land Use Plan (LUP). The area includes ocean views and offshore rocks. However, the proposed development will not substantially adversely affect the scenic vista, compared to what is already developed on the site. The parcel has been developed since at least 1948, and contains a dilapidated building and worn asphalt parking lot.
b. **No Impact:** There are no trees, rock outcroppings, or historic buildings within the project site.
c. **Less Than Significant:** The proposed park model units will be located in approximately the same location as an existing 4,000 square foot building, which was formerly used as a restaurant. It has been vacant for several years and is currently in dilapidated condition. There is an existing, larger RV park directly south of the project site. As such, the proposed development will be in character with the surrounding environment.
d. **Less Than Significant**: The project does not propose any development which would create a new source of substantial light or glare which adversely affect views. Any lighting will be required to comply with Title 21 Zoning.

Mitigation Measure AES-1

A condition shall be placed on the use permit requiring lighting to comply with Title 21 Coastal Zoning, which requires that all direct lighting be confined to the subject premises. All exterior lights, including any lights attached to the outside buildings, shall be the minimum necessary for the safe ingress, egress, and use of the structures, and shall be low-wattage, non-reflective, shielded and having a directional cast downward to prevent offsite glare directed toward ESHA areas and the viewshed.

Timing/Implementation: Prior to issuance of the Certificate of Occupancy
Enforcement: County Community Development Department

Monitoring: In perpetuity

2. Agriculture and Forest Resources

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

Discussion of Impacts

- **a. No Impact**: No prime farmland exists on the parcel.
- **b. No Impact:** No agricultural zoning exists on the parcel.
- **c. No Impact:** No rezone is required. The proposed use is a conditional use in the Commercial Recreation Zone District.
- **d. No Impact:** No loss of forest land or conversion of forest land to non-forest use will result from the project. The parcel is not zoned for forest land or timberlands.
- **e. No Impact:** The project does not involve changes to the existing environment that could adversely affect farmland or timberlands.

3. Air Quality

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of 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 or dust) adversely affecting a substantial number of people?	☐	☐	☒	☐

Discussion of Impacts

a. No Impact: The project would have no foreseeable impacts on the implementation of an air quality plan.

b. No Impact: Del Norte County is an "attainment" designated county and is not governed by "non-attainment" state or federal air quality standards. The air standards that Del Norte County falls under are outlined in North Coast Unified Air Quality Management District (NCUAQMD) Rules and Regulations.

c. No Impact: This project would involve diminutive short-term emissions rise as a result of the small-scale construction projects, but would not be expected to expose sensitive receptors to substantial pollutant concentrations.

d. Less Than Significant Impact: This project involves the construction of a four space RV park with parking for each space. During construction activities, there are expected small-scale increases in dust and exhaust from equipment, and resulting emissions would not be significant enough to affect the surrounding properties. Average daily trips are expected to decrease with the conversion of use to an RV park, compared with the previous use as a 4,000-plus square foot restaurant. Due to net decrease in traffic, the project is consistent with the air quality attainment plan.

4. Biological Resources

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

preservation policy or ordinance?				
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?	☐	☐	☐	☒

Discussion of Impacts

a. Less Than Significant Impact with Mitigation Incorporated: A *Biological Assessment for Development, Nautical Inn Property, Del Norte County* prepared by Galea Biological Consulting (GBC) in October 2021, completed a records search to identify candidate, sensitive, or special status species that may be located within the project area that could be impacted as a result of the project. The northern spotted owl (NSO), marbled murrelet (MAMU), and western snowy plover were identified as being within the search area based on results from the California Natural Diversity Database (CNDDB) 2021 quad search. With regard to the NSO and the MAMU, there is no suitable habitat near the project site nor are there any records of any being detected near the project site. The western snowy plover nests on barren sand beaches, which are located directly west of the project area. However, snowy plovers are not known to nest on this stretch of beach, which has a relatively high amount of foot traffic.

Other wildlife identified in the biological assessment include the northern red-legged frog, Del Norte and torrent salamanders, the tailed frog, Coho salmon, coastal cutthroat trout, and summer-run steelhead trout. No such habitat is available on or near the project site for these species. The project site does not contain streams, wetlands, or other aquatic features that would provide suitable habitat for listed fish or amphibian species. While these species may occur in aquatic habitats in the broader region, the proposed project would not result in direct disturbance, habitat modification, or changes to water quality that would affect these species.

The report from GBC does note that several bat species were included in the CNDDB list, including Thompson's big-eared bat, a sensitive species. Bats are known to utilize crawl spaces under shake roofs. This would likely occur in summer months. Due to the potential for bat use, it is recommended that if demolition of the existing building occurs during June through September, a wildlife biologist monitor the demolition. This will be included as BIO-1 Mitigation Measure.

Garter snakes were observed on the property during the field investigation for the biological assessment. It is advised that a wildlife biologist review the site immediately prior to demolition of the old building and remove any reptiles or amphibians which might be onsite to the state park immediately adjacent.

Based on the lack of suitable habitat within the project site, the absence of documented occurrences, and the limited potential for habitat modification, the project would not have a substantial adverse effect on any federally or state-listed species. Impacts would be less than significant with mitigation incorporated.

In addition to the biological assessment, a *Botanical Resources Assessment – Nautical Inn* was prepared in October 2021 by Kyle Wear. A list of special status plants that could potentially occur on the property was generated by consulting the California Natural Diversity Database (CDFW 2021a) and the CNPS Inventory of Rare and Endangered Plants (CNPS 2021b). Most of the plants on the scoping list occur in habitat that is not present in the project area. Ten plant types were considered to have at least moderate potential to occur on the parcel, and were identified as having a California Rare Plant Rank of 1 or 2. If present, these plants would likely occur on the coastal bluff or strand. There is also some potential for coastal species that can occur in disturbed habitat such as Siskiyou checkerbloom and Wolf's evening primrose, adjacent to the existing parking lot and in the area just east of the parcel along Highway 101. However, the proposed project is entirely within an existing developed area, mostly in the footprint of the existing building and asphalt pavement. The botanical resources

assessment concludes there will be minimal impacts to vegetation and low risk of impacts to sensitive botanical resources.

b. **Less Than Significant Impact:** The *Botanical Resources Assessment – Nautical Inn*, prepared by botanical consultant Kyle Wear in October 2021, states there was no evidence of hydric soil or wetland hydrology observed on the parcel. However, the presence of Coastal dune willow thickets on the coastal bluff face meet the definition of a one-parameter wetland, under the California Coastal Act. As the proposed project is entirely within an existing developed area and is outside of ESHA, there will be minimal impacts to the vegetation and low risk of impacts to sensitive botanical resources.

c. No Impact: As noted previously, the *Botanical Resouces Assessment – Nautical Inn* noted Coastal dune willow thickets on the bluff face, which qualifies the area as a one-parameter wetland. The report did not find evidence of hydric soil or wetland hydrology, and no soil removal or fill is proposed in this area.

d. Less Than Significant Impact with Mitigation Incorporated: The *Biological Assessment for Development, Nautical Inn Property, Del Norte County* did acknowledge the potential habitat for birds covered by the Migratory Bird Treaty Act adjacent to the project area, in the form of thickets of willow along the west edge of the property. It is recommended that if construction occurs during the migratory bird breeding season, February 1 to August 15, surveys for nesting migratory birds should occur by a qualified biologist in the weeks before the onset of construction. If nesting birds are located adjacent to the construction zone, construction within 300 feet of a nest site should be postponed until the young fledge the nest and are mobile. With mitigation incorporated, this project will not have a significant impact on the movement of any native resident or migratory fish or wildlife species, etc. This is included as BIO-2 Mitigation Measure.

e. Less Than Significant Impact with Mitigation Incorporated: This project is located on a parcel that contains a coastal bluff, which is an environmentally sensitive habitat area identified in the county's Local Coastal Program (LCP). The sensitive area is defined as running inland of the mean high tide line to the crest of the bluff. The LCP states that development in areas adjacent to environmentally sensitive habitat areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas. The proposed project design includes a 16 foot non-development buffer eastward from the top of the bluff. The GBC report states this buffer is designed to have the least impact to natural resources as possible. Therefore, with mitigation incorporated, this project will not conflict with any local policies or ordinances protecting biological resources. This is included as BIO-3 Mitigation Measure.

f. No Impact: This project would not conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan.

Mitigation Measure BIO-1

A condition shall be added to the use permit stating that if demolition of the former restaurant building occurs between June through September, demolition shall be overseen by a wildlife biologist to prevent impacts to bat species.

Timing/Implementation: June through September of any year in which construction occurs
Enforcement: County Community Development Department
Monitoring: June through September of any year in which construction occurs

Mitigation Measure BIO-2

A condition shall be added to the use permit stating that if demolition or construction occurs during the migratory bird breeding season, February 1 to August 15, surveys for nesting migratory birds shall occur by a qualified biologist in the weeks before the onset of construction. If nesting birds are located adjacent to the construction zone, construction within 300 feet of a nest site should be postponed until the young fledge the nest and are mobile. This condition shall be conveyed to the California Department of Housing and Community Development to consider as part of the construction permit.

Timing/Implementation: During any earthwork activities related to demolition or construction
Enforcement: Community Development Department, Department of Housing and Community Development
Monitoring: February 1 to August 15

Mitigation Measure BIO-3
A condition shall be added to the use permit stating that there shall be a 16 foot wide non-development buffer, measured eastward from the 38 foot contour elevation, as shown in the September 10, 2021 Technical Memorandum and Bluff Retreat and Erosion Reevaluation, Nautical Inn by LACO, and affirmed by Lee Tromble, registered professional engineer, in a letter dated December 15, 2025. This condition shall be conveyed to the California Department of Housing and Community Development to consider as part of the construction permit.

Timing/Implementation: In perpetuity this area is defined as a non-development area
Enforcement: County Community Development Department
Monitoring: In perpetuity

5. Cultural Resources

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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 dedicated cemeteries?	☐	☒	☐	☐

Discussion of Impacts

a-c. Less Than Significant Impact with Mitigation Incorporated: The parcel is within the Aboriginal Territory of local tribes (Elk Valley Rancheria and Tolowa Dee-ni' Nation). Notice was provided to the two tribes traditionally culturally affiliated with the project. On February 9, the Tolowa Dee-ni' Nation submitted the following comment: "The proposed project is in a sensitive cultural/archeological site. The Nation requests that a tribal cultural monitor be present for portions of the project implementation. This can be coordinated through the Nation's THPO." This comment will be incorporated as a condition of approval for the project and is addressed as mitigation measure CULT-1.

In addition to the requested tribal cultural monitor, all development projects in areas of significance to local tribes will contain an inadvertent discovery condition to protect tribal cultural resources that may be unearthed during ground-disturbing activities, ensuring any resources located on site will be properly treated so as not to cause a significant impact. This is addressed as mitigation measure CULT-2.

Both mitigation measures are also discussed in Section 18.

Mitigation Measure CULT-1

As requested by a representative of the Tolowa Dee-ni' Nation, a cultural monitor condition will be added to the Coastal Development Permit stating that the proposed project is in a sensitive cultural/archeological site. A tribal cultural monitor shall be present for portions of the project implementation, including earthwork activities or as coordinated through the Tolowa Dee-ni' Nation's Tribal Heritage Preservation Office. This condition shall be conveyed to the California Department of Housing and Community Development to consider as part of the construction permit.

Timing/Implementation: During any earthwork activities related to the construction of four RV spaces.
Enforcement: County Community Development Department, Tolowa Dee-ni' Nation
Monitoring: Ongoing during construction

Mitigation Measure CULT-2

An inadvertent discovery condition shall be added to the Coastal Development Permit stating that in the event of archeological or cultural resources are encountered during construction, work shall be temporarily halted and a qualified archaeologist, local tribes, and the County shall be immediately contacted. Workers shall avoid altering the materials and their context until a qualified professional archaeologist, in collaboration with the local tribes has evaluated the situation and provided appropriate recommendations. Project personnel shall not collect any resources.

Timing/Implementation: During any earthwork activities related to the construction of four RV spaces.
Enforcement: County Community Development Department
Monitoring: Ongoing during construction

6. Energy

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Result in potentially significant environmental impact 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?	☐	☐	☐	☒

Discussion of Impacts

a. **No Impact:** The project would have no foreseeable impacts on increasing wasteful, inefficient, or unnecessary energy use due to the relatively small size of the project. The project will use minimal amounts of fuel and energy.
b. **No Impact:** This project does not conflict with nor obstruct a state or local plan for renewable energy or energy efficiency.

7. Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Discussion of Impacts

a. The Northern California coast lies near the Cascadia Subduction Zone and is a seismically active region. Strong ground shaking is considered a regional hazard that could cause damage in the project vicinity. Due to the proximity of active seismic sources, certain areas of Del Norte County may also be subject to secondary seismic effects, including liquefaction, lateral spreading, and seismically induced landslides.

In 2014, LACO prepared a *Coastal Bluff Setback Recommendation Report* in conjunction with a prior development application for a three-story, 20-unit motel on the project site. Based on comments from the California Coastal Commission, LACO subsequently revised its analysis in the *2021 Technical Memorandum: Bluff Retreat and Erosion Reevaluation, Nautical Inn*, dated September 2021. For the current development proposal, registered professional engineer Lee Tromble submitted a letter dated December 15, 2025, stating the proposed project would result in minimal ground disturbance compared to the project evaluated in the earlier geotechnical reports. Mitigation Measure GEO-1 will ensure the project is adequately set back from the top of the bluff, thus mitigating for strong seismic ground shaking, seismic-related ground failure, and landslides.

i) The site is not located within an earthquake fault zone.

ii) The site is located within a seismically active region associated with the Cascadia Subduction Zone, in which large earthquakes are expected to occur during the economic lifespan of the development. Rupture along the Cascadia Subduction Zone boundary may produce and earthquake with a maximum movement magnitude of 9.0 or greater.

iii) The risk associated with tsunami/high seas inundation hazard and liquefaction hazard was found to be acceptably low.

iv) Slope failure events along the coastal bluffs in the vicinity typically occur as a result of toe erosion with shear failure. LACO noted that the beach in this region has been characterized as accretionary, at a rate of 0 to 1.5 feet per year. The bluff setback distance was calculated by combining a factor of safety component with the greatest distance to the bluff edge, and adding the estimated erosion distance over a 75 year period.

b. Less Than Significant Impact: The project will not result in substantial erosion or loss of topsoil. Development will be located in a previously disturbed area. Portions of the existing parking area will be removed and replaced with an onsite wastewater treatment system.

c. Less Than Significant Impact with Mitigation Incorporated: There is an existing reinforced masonry wall underpinning a westerly portion of the old restaurant building. Mitigation Measure GEO-2 specifies that no maintenance, alteration, or improvement of this wall is authorized under this permit.

d. No Impact: The parcel is not located in an area of known expansive soils.

e. No Impact: An onsite sewage disposal evaluation of the property was prepared in July 2025 by a registered civil engineer. The report states that water was found four feet below the ground surface, which is not adequate for a conventional sewage disposal system. However, the report concludes that the property is suitable for a Wisconsin Mound sewage disposal system, which can function with a minimum of two feet of separation between groundwater and ground surface. The primary area for the system is currently paved with asphalt, which must be properly demolished and removed from the site prior to construction of the mound. The estimated daily sewage flow is calculated at 800 gallons per day (100 gallons a day per person, multiplied by two people for each of the 4 proposed one-bedroom RV units). This is consistent with Del Norte County Code sewage flow quantities for luxury camps.

f. **No Impact:** The project is not located in an area known to contain a unique paleontological resource or geologic feature.

Mitigation Measure GEO-1

A condition shall be added to the use permit stating that there shall be a 16 foot wide non-development buffer, measured eastward from the 38 foot contour elevation, as shown in the September 10, 2021 *Technical Memorandum Bluff Retreat and Erosion Reevaluation, Nautical Inn* by LACO, and affirmed by Lee Tromble, registered professional engineer, in a letter dated December 15, 2025. This condition shall be conveyed to the California Department of Housing and Community Development to consider as part of the construction permit.

Timing/Implementation: In perpetuity this area is defined as a non-development area. To be allowed to develop within this area will require subsequent review and approval by the County Community Development Department in coordination with the California Coastal Commission.
Enforcement: Community Development Department, California Department of Housing and Community Development
Monitoring: In perpetuity

Mitigation Measure GEO-2

A condition shall be added to the use permit stating that the approval of the use permit does not include rights to maintain, alter, or improve the existing retaining wall built into the bluff face.

Timing/Implementation: In perpetuity. To be allowed to alter this area will require subsequent review and approval by the County Community Development Department in coordination with the California Coastal Commission.
Enforcement: Community Development Department
Monitoring: In perpetuity

8. Greenhouse Gas Emissions

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

Discussion of Impacts

a-c. Less Than Significant Impact: In 2015, Governor Brown, Jr. signed into law Senate Bill (SB) 350 known as the Clean Energy and Pollution Reduction Act of 2015 (De León, Chapter 547, Statutes of 2015), which sets ambitious annual targets for energy efficiency and renewable electricity aimed at reducing greenhouse gas (GHG) emissions. SB 350 requires the California Energy Commission to establish annual energy efficiency targets that will achieve a cumulative doubling of statewide energy efficiency savings and demand reduction in electricity and natural gas end uses by January 1, 2030. This mandate is one of the primary measures to help the state achieve its long-term climate goal of reducing GHG emissions to 40 percent below 1990 levels by 2030. The proposed SB 350 doubling target for electricity increases from 7,286 gigawatt hours (GWh) in 2015 up to 82,870 GWh in 2029.

Construction of the project may generate GHG emissions as a result of combustion of fossil fuels used in construction equipment. Use of variety of construction materials would contribute indirectly to GHG emissions because of the emissions associated with their manufacture. The construction-related GHG emissions would be minor and short-term and would not constitute a significant impact based on established thresholds. The project would result in the addition of 4 RV spaces. The traffic study prepared by the project engineer indicates a net reduction in peak traffic from the previous restaurant.

9. Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

Discussion of Impacts

a. No Impact: The project would use small amounts of hazardous materials, such as paint, solvents, and resins, and other common construction-related materials. However, the transport and use is not expected to be routine or significant.

b. No Impact: Accidents from the use of small amounts of hazardous materials, as described above, are not reasonably foreseeable or likely.

c. No Impact: The project is not within ¼ mile of a school.

d. No Impact: The project is not on a site which is included on any list of hazardous materials sites.

e. No Impact: The project is located approximately 15 miles from Jack McNamara Field, the nearest public airport. It is not located within Del Norte County's adopted Airport Land Use Compatibility Plan

f. No Impact: The project is not anticipated to create a conflict with emergency response or evacuation plans.

g. Less Than Significant Impact: The site is a developed parcel, with Highway 101 to the east, the ocean to the west, and a commercial recreation resort to the south. Pelican State Beach is located directly north, and the area is mostly vegetated. The project is located within a Moderate Fire Hazard Severity Zone as classified by Calfire. The project will have to comply with State Minimum Fire Safe Regulations and state standards for building construction.

10. Hydrology and Water Quality

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☐	☒
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on-or off-site?	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☐	☒

iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional source of polluted runoff; or	☐	☐	☐	☒
iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable ground water management plan?	☐	☐	☐	☒

Discussion of Impacts

a. No Impact: It is not anticipated that the approval of the project would violate any water quality standards or waste discharge requirements. The project proposes the use of a "Wisconsin Mound" onsite wastewater treatment system, discussed in Section 7 of this document.

b. No Impact: The proposed development will connect to the Smith River Community Services District, a public water system, and it is therefore not anticipated that the approval of the project would substantially deplete groundwater supplies or interfere substantially with groundwater recharge.

c. i. Less Than Significant: It is not anticipated that the approval of the project would substantially alter the existing drainage pattern of the site or area in a manner which would result in substantial erosion or siltation on- or off-site.

ii. No Impact: Development is proposed in a previously disturbed site, and is not expected to substantially increase the rate or amount of surface runoff in a manner which would result in flooding.

iii. No Impact: The project is not anticipated to create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional source of polluted runoff.

iv. No Impact: The proposed development is not within a special flood hazard area. There is an area below the toe of the slope, on the project parcel, that is mapped as Zone VE. However, the proposed development is approximately 20 feet higher in elevation that this area.

d. No Impact: The project is not located within a flood hazard or seiche zone. The project is located within the Tsunami Evacuation Zone, and although a tsunami run-up evaluation was not performed as part of the scope of work in more recent geotechnical reports, it was addressed briefly in *Nautical Inn RV Park Site Geologic Investigation*, dated February 8, 1995. The report states it is "remotely possible that a great earthquake tsunami could overtop the bluff and wash vehicles into the ocean. The risk of loss of human life due to a sudden great earthquake is equal to or higher on any beach." Additionally, Del Norte County has experienced several tsunamis in the past 60-plus years, including significant events in 1964 (associated with a large earthquake in Alaska) and 2011 (associated with a large earthquake in Japan). In both cases, the majority of local impacts from these significant events were confined to the low lying, protruding portions of Del Norte County, most notably the Crescent City Harbor (in both 1964 and 2011) and the downtown Crescent City area (in 1964). Other smaller tsunamis have occurred with lesser impacts. The project area is not believed to have been impacted by any of these significant tsunami events in the past 50 years, likely due to its relatively high elevation on the top of the coastal terrace.

e. No Impact: The project would not conflict with or obstruct implementation of a water quality control plan or sustainable ground water management plan.

11. Land Use and Planning

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation**	**Less Than Significant Impact**	**No Impact**

		Incorporated		
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation of an agency adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Discussion of Impacts

a. No Impact: The proposed project would not divide any community, designated planning area, or surrounding area. The project site is located within the Smith River Planning Area and is designated as Visitor Serving Commercial in the County's Coastal Element of the General Plan (October 1983) and has a zoning of Commercial Recreation (CR) District.

b. **No Impact:** The proposed project does not conflict with any regional land use or environmental plans. No environmental plans or policies of state or regional agencies are directly applicable or would be affected by the proposed project.

12. Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Discussion of Impacts

a. No Impact: The project site is not located in an area designated to have significant mineral resources, as defined by the California Department of Conservation under the Surface Mining and Reclamation Act. The proposed project would not affect mineral resources in the area.

b. No Impact: The project site and the surrounding area are not subject to mineral resource recovery operations. Thus, the proposed project would not affect mining operations elsewhere in the county.

13. Noise

Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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) Generation of excessive groundborne vibration or groundborne 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?	☐	☐	☐	☒

Discussion of Impacts

a. **Less Than Significant Impact:** The project should not result in a significant level of noise beyond that which is already present. A traffic analysis prepared for the project indicates a net reduction in traffic activity from the previous restaurant use. A temporary increase in noise may be experienced during construction activities, however this should return to a normal level upon completion of the project. The land use is not identified by the county as being "noise sensitive" and no attenuation is proposed to account for the parcel's proximity to U.S. Highway 101 North.
b. **Less Than Significant Impact:** The project will not expose any persons to or generate excessive ground borne vibration or ground borne noise levels. While construction activities typically lead to a slight increase in ground borne vibrations, these levels are rarely substantial and decrease quickly with distance from the construction equipment, unless there are unusual geologic conditions present. The construction equipment and operations for this project will be similar to those found at many other construction sites.
c. **No Impact:** The project is located outside of the county's Airport Land Use Plan, and is not within two miles of a public airport.

14. Population and Housing

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?	☐	☐	☐	☒

Discussion of Impacts

a. **No Impact:** The proposed project would result in an RV Park with four spaces. It would not result in substantial amounts of population growth onsite, nor would it affect population growth in the area. The intended use is for short-term guest lodging for the traveling public.
b. **No Impact:** The proposed project would not displace any housing units located near the site. The project site currently has a vacant restaurant building and will not affect any other structures nearby.

15. Public Services

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?	☐	☐	☐	☒

Discussion of Impacts

a. **Fire Protection:** The project must comply with the requirements of the State Minimum Fire Safe Regulations for fire safety and fire emergency response. The project is served by the Smith River Fire Protection District and Calfire, as it is located within the State Responsibility Area.
Police Protection: The project would not result in the need to alter or expand police service in the area, and would not have an adverse effect on existing police service or response times. The area is served by the Del Norte County Sheriff's Office.
Schools: The project would not involve an increase in the number of school age children living in the area, and as such no new schools or expansions to existing schools would be needed. The Del Norte County Unified School District collects a school mitigation fee, calculated on a square foot basis, for new residential development. The fee goes toward the maintenance of the county school system to assure adequate classroom space is available for a growing population.
Parks: The project would allow for the development of a four space RV Park, and tenants likely may visit parks in the vicinity, including Pelican Beach State Park directly to the north. However, the limited space number, and thus limited number of users, would not place additional strain on existing parks.
Other public facilities: The project will not place additional strain, either directly or indirectly, on other public services or facilities.

16. Recreation

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Would the project 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) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion of Impacts

a. **Less Than Significant Impact:** The project would allow for the development of a four space RV Park, and tenants likely may visit parks in the vicinity, including Pelican Beach State Park directly to the north. Other parks within two miles of the project site are Kamph County Park, Wavecrest Drive Public Access, and Crissey Field State

Creation Site in Oregon. The limited space number at the proposed RV park, combined with multiple publicly accessible area for recreation, would likely prevent substantial physical deterioration of any particular park.

b. No Impact: The project does not require the construction or expansion of recreational facilities.

17. Transportation

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

Discussion of Impacts

a. No Impact: The project is not anticipated to conflict with a program, plan, ordinance, or policy addressing any circulation system.

b. Less Than Significant Impact: The project is not expected to be inconsistent with CEQA Guidelines section 15064.3, subdivision (b). A project-specific traffic assessment was not submitted. However, the applicant received approval in 2025 for a similar RV park located directly across U.S. Highway 101. That project includes five RV spaces, one more than the proposed project. Based on a traffic assessment prepared by Lee Tromble Engineering, the approved RV park, together with existing uses on the property, was anticipated to generate approximately 15 to 25 average daily trips (ADT). In addition, the applicant submitted a traffic analysis prepared for a previously proposed 20-guest-room motel on the subject site. That analysis concluded that the proposed use would result in a net decrease in traffic compared to the former restaurant use.

According to the 2020 Del Norte Region SB 743 Implementation Plan, the Traffic Analysis Zone (TAZ 103) containing the project area describes the average VMT to be approximately 24.71 daily per capita and 22.33 daily per employee. Further, the plan provides for thresholds of significance that screen certain project out of constituting a significant impact toward VMT generation. In this case, the project is expected to generate less than 110 trips per day, so it can be considered to have a less than significant impact as a "small project" under Section 3.2.1 of the SB 743 Implementation Plan.

c. No Impact: The project does not increase hazards due to a design feature. The project would allow access to the property from an existing encroachment from U.S. Highway 101 North to the parcel. Improvements to the encroachment may be a condition of the use permit. There are no dangerous transportation features in the project area and this project would not require improvements that would introduce circulation or traffic safety hazards.

d. No Impact: The project would not impact on emergency access in the surrounding area.

18. Tribal Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact

		Incorporated		
a) 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, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Discussion of Impacts

a. Less Than Significant Impact with Mitigation Incorporated: The parcel is within the Aboriginal Territory of local tribes (Elk Valley Rancheria and Tolowa Dee-ni' Nation). Notice was provided to the two tribes traditionally culturally affiliated with the project. On February 9, the Tolowa Dee-ni' Nation submitted the following comment: "The proposed project is in a sensitive cultural/archeological site. The Nation requests that a tribal cultural monitor be present for portions of the project implementation. This can be coordinated through the Nation's THPO." This comment will be incorporated as a condition of approval for the project and is addressed as mitigation measure TRIBAL CULTURAL RESOURCES-1.

In addition to the requested tribal cultural monitor, all development projects in areas of significance to local tribes will contain an inadvertent discovery condition to protect tribal cultural resources that may be unearthed during ground-disturbing activities, ensuring any resources located on site will be properly treated so as not to cause a significant impact. This is addressed as mitigation measure TRIBAL CULTURAL RESOURCES -2.

Both mitigation measures are also discussed in Section 5.

Mitigation Measure TRIBAL CULTURAL RESOUCES-1

As requested by a representative of the Tolowa Dee-ni' Nation, a cultural monitor condition will be added to the Coastal Development Permit stating that the proposed project is in a sensitive cultural/archeological site. A tribal cultural monitor shall be present for portions of the project implementation, including earthwork activities or as coordinated through the Tolowa Dee-ni' Nation's Tribal Heritage Preservation Office. This condition shall be conveyed to the California Department of Housing and Community Development to consider as part of the construction permit.

Timing/Implementation: During any earthwork activities related to the construction of four RV spaces.
Enforcement: County Community Development Department, Tolowa Dee-ni' Nation
Monitoring: Ongoing during construction

Mitigation Measure: TRIBAL CULTURAL RESOURCES-2

An inadvertent discovery condition shall be added to the Use Permit stating that in the event of archeological or cultural resources are encountered during construction, work shall be temporarily halted and a qualified archaeologist, local tribes, and the County shall be immediately contacted. Workers shall avoid altering the materials and their context until a qualified professional archaeologist, in collaboration with the local tribes has evaluated the situation and provided appropriate recommendations. Project personnel shall not collect any resources. This condition shall be provided to the California Department of Housing and Community Development.

Timing/Implementation: During any earthwork activities related to the construction of four RV spaces.
Enforcement: County Community Development Department, Tolowa Dee-ni' Nation
Monitoring: Ongoing during construction

19. Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric 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 providers 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?	☐	☐	☐	☒

Discussion of Impacts

a. **Less Than Significant Impact:** The project proposes a new Wisconsin Mound onsite sewage disposal system. This system was designed by an engineer and was determined to be adequate to serve the proposed use. The system is not anticipated to have a significant impact on the environment.
b. **No Impact:** The project will receive water from the Smith River Community Services District. The applicant has submitted a letter from the district indicating that they have the capacity to serve the proposed development.
c. **No Impact:** The project will be served by a private onsite wastewater treatment system.
d. **No Impact:** The project is not anticipated to generate solid waste in excess of state or local standards.
e. **No Impact:** The project will comply with federal, state, and local statutes related to solid waste.

20. Wildfire

Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to	☐	☐	☐	☒

pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Discussion of Impacts

a. **No Impact:** The project would not substantially impair an adopted emergency response plan or emergency evacuation plan.
b. **No Impact:** The project, as designed and sited on the property, would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. The parcel as a whole contains limited vegetation, and is bounded by US Highway 101 N on its east side and the Pacific Ocean on its west side.
c. **No Impact:** The project is located within the Calfire State Responsibility Area and is designated as a Moderate Fire Hazard Severity Zone. The project will be required to be developed in substantial compliance with State Minimum Fire Safe Regulations as they apply to RV park construction. Standards for road widths, emergency water supply, setbacks for defensible space, gates, and ingress/egress must be incorporated into final plans for the development. Calfire will review the Permit to Construct the park for compliance with the current standards.
d. **No Impact:** The project, as designed and sited, will not 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.

Mitigation Measure: WILDFIRE - 1

The project shall comply with the California Minimum State Fire Safe Standards. All structures shall comply with the State's Wildland Urban Interface (WUI) Codes and Standards including Chapter 7A of the California Building Code (CBC) and Chapter R337 of the California Residential Code (CRC) as it applies to the development of an RV park.

Timing/Implementation: Some standards may be required prior to issuance of the permit to construct from HCD while some may be verified prior to issuance of a certificate of completion and/or occupancy. Upon approval of the use Ppermit, the processing of the permit to construct follows the California Department of Housing and Community Development's process.

Enforcement: California Department of Housing and Community Development

Monitoring: TBD by California Department of Housing and Community Development

21. Mandatory Findings of Significance

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact 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 will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

a. No Impact: The project does not 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. No Impact: The proposed project will not create any cumulative impacts on the surrounding areas.

c. Less Than Significant Impact with Mitigation Incorporated: The project could potentially result in environmental effects which could cause substantial adverse effects on human beings, primarily associated with the geological features of the site, if left unmitigated. Specifically, the risk of bluff failure due to seismic events or disturbance during construction, if it occurs in the area closest to the top of the bluff. However, implementation of mitigation measure and conditions will reduce these potential risks to levels that are less than significant.

Mitigation Monitoring Plan

Aesthetics

Mitigation Measure AES-1 A condition shall be placed on the use permit requiring lighting to comply with Title 21 Coastal Zoning, which requires that all direct lighting be confined to the subject premises. All exterior lights, including any lights attached to the outside buildings, shall be the minimum necessary for the safe ingress, egress, and use of the structures, and shall be low-wattage, non-reflective, shielded and having a directional cast downward to prevent offsite glare directed toward ESHA areas and the viewshed.

Timing/Implementation: Prior to issuance of the Certificate of Occupancy
Enforcement: County Community Development Department
Monitoring: In perpetuity

Biological Resources

Mitigation Measure BIO-1 A condition shall be added to the use permit stating that if demolition of the former restaurant building occurs between June through September, demolition shall be overseen by a wildlife biologist to prevent impacts to bat species.

Timing/Implementation: June through September of any year in which construction occurs
Enforcement: County Community Development Department
Monitoring: June through September of any year in which construction occurs

Mitigation Measure BIO-2 A condition shall be added to the use permit stating that if demolition or construction occurs during the migratory bird breeding season, February 1 to August 15, surveys for nesting migratory birds shall occur by a qualified biologist in the weeks before the onset of construction. If nesting birds are located adjacent to the construction zone, construction within 300 feet of a nest site should be postponed until the young fledge the nest and are mobile. This condition shall be conveyed to the California Department of Housing and Community Development to consider as part of the construction permit.

Timing/Implementation: During any earthwork activities related to demolition or construction
Enforcement: Community Development Department, Department of Housing and Community Development
Monitoring: February 1 to August 15

Mitigation Measure BIO-3 A condition shall be added to the use permit stating that there shall be a 16 foot wide non-development buffer, measured eastward from the 38 foot contour elevation, as shown in the September 10, 2021 Technical Memorandum and Bluff Retreat and Erosion Reevaluation, Nautical Inn by LACO, and affirmed by Lee Tromble, registered professional engineer, in a letter dated December 15, 2025. This condition shall be conveyed to the California Department of Housing and Community Development to consider as part of the construction permit.

Timing/Implementation: In perpetuity this area is defined as a non-development area
Enforcement: County Community Development Department
Monitoring: In perpetuity

Cultural Resources

Mitigation Measure CULT-1 As requested by a representative of the Tolowa Dee-ni' Nation, a cultural monitor condition will be added to the Coastal Development Permit stating that the proposed project is in a sensitive cultural/archeological site. A tribal cultural monitor shall be present for portions of the project implementation, including earthwork activities or as coordinated through the Tolowa Dee-ni' Nation's Tribal Heritage Preservation Office. This condition shall be conveyed to the California Department of Housing and Community Development to consider as part of the construction permit.

Timing/Implementation: During any earthwork activities related to the construction of four RV spaces.
Enforcement: County Community Development Department, Tolowa Dee-ni' Nation
Monitoring: Ongoing during construction

Mitigation Measure CULT-2 An inadvertent discovery condition shall be added to the Coastal Development Permit stating that in the event of archeological or cultural resources are encountered during construction, work shall be temporarily halted and a qualified archaeologist, local tribes, and the County shall be immediately contacted. Workers shall avoid altering the materials and their context until a qualified professional archaeologist, in collaboration with the local tribes has evaluated the situation and provided appropriate recommendations. Project personnel shall not collect any resources.

Timing/Implementation: During any earthwork activities related to the construction of four RV spaces.
Enforcement: County Community Development Department
Monitoring: Ongoing during construction

Geology and Soils

Mitigation Measure GEO-1 A condition shall be added to the use permit stating that there shall be a 16 foot wide non-development buffer, measured eastward from the 38 foot contour elevation, as shown in the September 10, 2021 *Technical Memorandum Bluff Retreat and Erosion Reevaluation, Nautical Inn* by LACO, and affirmed by Lee Tromble, registered professional engineer, in a letter dated December 15, 2025. This condition shall be conveyed to the California Department of Housing and Community Development to consider as part of the construction permit.

Timing/Implementation: In perpetuity this area is defined as a non-development area. To be allowed to develop within this area will require subsequent review and approval by the County Community Development Department in coordination with the California Coastal Commission.
Enforcement: Community Development Department, California Department of Housing and Community Development
Monitoring: In perpetuity

Mitigation Measure GEO-2 A condition shall be added to the use permit stating that the approval of the use permit does not include rights to maintain, alter, or improve the existing retaining wall built into the bluff face.

Timing/Implementation: In perpetuity. To be allowed to alter this area will require subsequent review and approval by the County Community Development Department in coordination with the California Coastal Commission.
Enforcement: Community Development Department
Monitoring: In perpetuity

Tribal Cultural Resources

Mitigation Measure TRIBAL CULTURAL RESOUCES-1 As requested by a representative of the Tolowa Dee-ni' Nation, a cultural monitor condition will be added to the Coastal Development Permit stating that the proposed project is in a

sensitive cultural/archeological site. A tribal cultural monitor shall be present for portions of the project implementation, including earthwork activities or as coordinated through the Tolowa Dee-ni' Nation's Tribal Heritage Preservation Office. This condition shall be conveyed to the California Department of Housing and Community Development to consider as part of the construction permit.

Timing/Implementation: During any earthwork activities related to the construction of four RV spaces.
Enforcement: County Community Development Department, Tolowa Dee-ni' Nation
Monitoring: Ongoing during construction

Mitigation Measure: TRIBAL CULTURAL RESOURCES-2 An inadvertent discovery condition shall be added to the Use Permit stating that in the event of archeological or cultural resources are encountered during construction, work shall be temporarily halted and a qualified archaeologist, local tribes, and the County shall be immediately contacted. Workers shall avoid altering the materials and their context until a qualified professional archaeologist, in collaboration with the local tribes has evaluated the situation and provided appropriate recommendations. Project personnel shall not collect any resources. This condition shall be provided to the California Department of Housing and Community Development.

Timing/Implementation: During any earthwork activities related to the construction of four RV spaces.
Enforcement: County Community Development Department, Tolowa Dee-ni' Nation
Monitoring: Ongoing during construction

Appendix

- Biological Assessment for Development, Nautical Inn Property, Del Norte County, APN # 101-070-022, prepared by Frank Galea, Certified Wildlife Biologist, dated October 2021
- Botanical Resources Assessment, Nautical Inn, 16850 Hwy 101 (APN: 101-070-022), prepared by Kyle Wear, Botanical Consultant, dated October 2021
- Plot Plan – Nautica Beach Resort, prepared by Lee Tromble, Civil Engineer, revised December 2025
- Draft Geotechnical Report, APN 101-070-022 Smith River, California, prepared by LACO Associates, dated July 2014
- Technical Memorandum Bluff Retreat and Erosion Reevaluation, Nautical Inn Site, prepared by LACO Associates, dated September 10, 2021
- Nautica Beach Resort Letter, prepared by Lee Tromble, Civil Engineer, dated December 15, 2025
- On-Site Sewage Disposal Evaluation, APN 101-070-22, prepared by Lee Tromble, Civil Engineer, dated July 9, 2025
- Will-Serve letter for water service, prepared by Smith River Community Services District, dated August 22, 2025

GALEA BIOLOGICAL CONSULTING

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BIOLOGICAL ASSESSMENT FOR DEVEOPMENT, NAUTICAL INN PROPERTY, DEL NORTE COUNTY. APN # 101-070-22

Submitted to: Ward Stover
Stover Engineering
711 H Street
Crescent City, CA 95531

Prepared by: Frank Galea, Certified Wildlife Biologist
Galea Biological Consulting
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Crescent City, CA 95531

Submitted: October, 2021

By:

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1.0 SUMMARY

A biological assessment was prepared for a proposed development to be built on a property where the Nautical Inn restaurant used to be. The project is located just south of the Oregon border, between Highway 101 and the ocean (Figure 1).

Galea Biological Consulting (GBC) Incorporated was contracted to provide a general biological assessment to determine the potential impacts of the project on sensitive wildlife species, including federally or state listed species, and species of special concern. Additionally, GBC conducted a review of habitats within and adjacent to the project area to determine the location of wetlands or watercourses which may be present.

No threatened or endangered wildlife or plant species was found in or near the project area.

2.0 INTRODUCTION

2.1 Project Description

The Applicant proposes to tear down an old, single-story building on the beach bluff which once was the site of a restaurant, and build a multi-story building on the same site. The new building would be located sixteen feet back from the top of the bluff, whereas the old building was located directly on the top of the bluff. An improved leach field between the building and the highway is part of the proposal.

2.2 Environmental Setting

The proposed project is situated on a .7-acre property located 0.5 miles south of the Oregon border. The property is located on the bluff overlooking the ocean. Directly to the north is Pelican Beach State Park, and directly to the south if the White Rock resort, a collection of mobile units in high density. The property is adjacent to Highway 101, and across the highway to the east is a wooded hill with commercial and residential units.

2.3 Physical Environment

The climate of northern California is characterized as Mediterranean, with cool, wet winters and warm, dry summers with frequent fog. Along the coastline, proximity to the Pacific Ocean produces high levels of humidity and results in abundant fog and fog drip precipitation. The maritime influence diminishes with distance from the coast, resulting in lesser amounts of fog, drier summer conditions and more variable temperatures. Annual precipitation in the project watershed ranges from 60 - 150 inches occurring primarily as rain during the winter months. Air temperatures measured in the Fort Dick area vary from 30°F to 85°F annually.

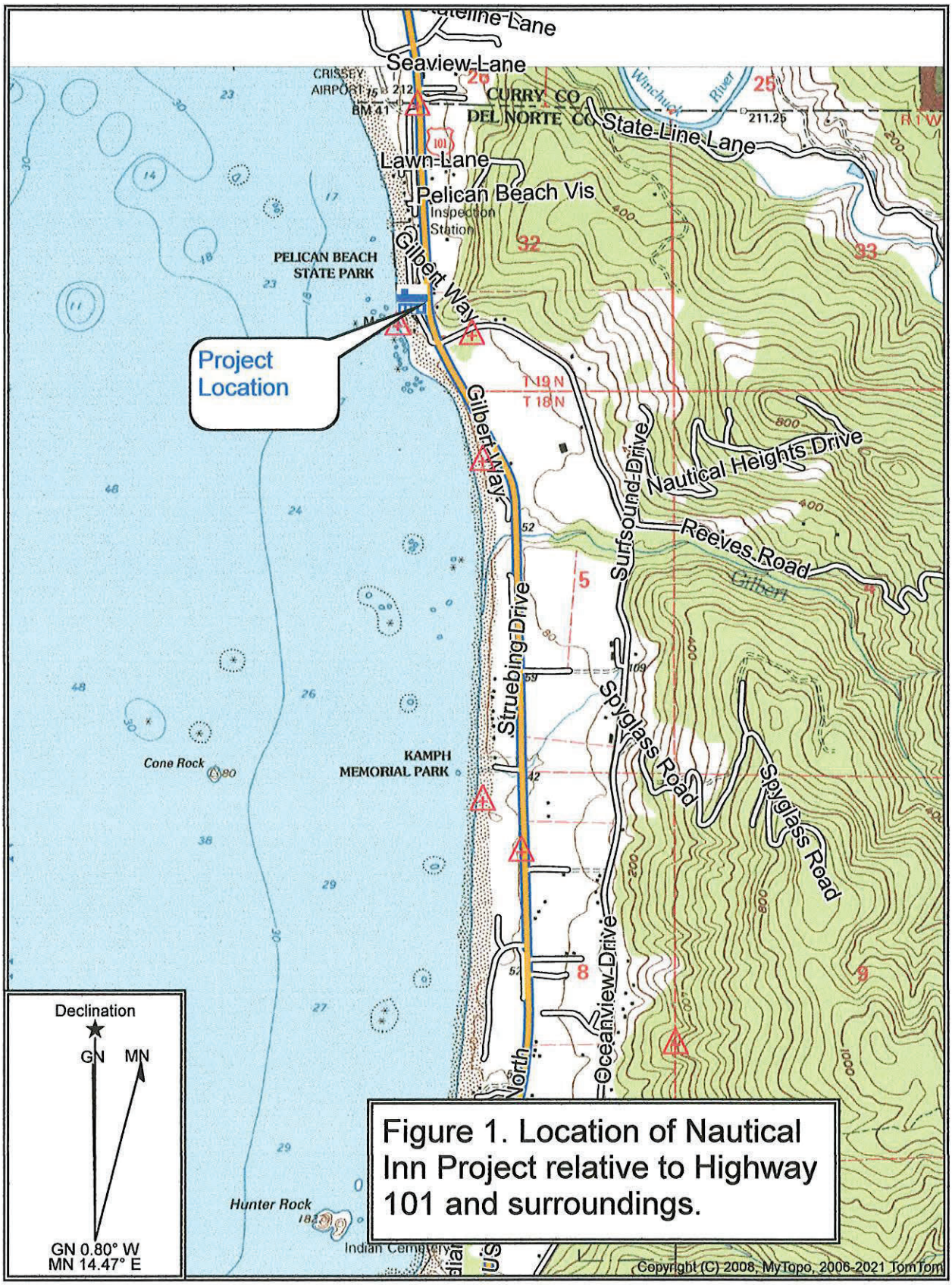


Figure 1. Location of Nautical Inn Project relative to Highway 101 and surroundings.

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2.4 Regulatory Context

The project is located within the geographic range of several special- status plant and wildlife species. Biological resources on the site may be subject to agency jurisdictions and regulations, as described below.

(a) U.S. Fish and Wildlife Service (USFWS). The USFWS has jurisdiction over species listed as threatened or endangered under the federal Endangered Species Act (ESA). The ESA protects listed species from "take," broadly defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." An activity is defined as a "take" even if unintentional or accidental. An endangered plant or wildlife species is one that is considered in danger of becoming extinct throughout all, or a significant portion of its range. A threatened species is one that is likely to become endangered within the foreseeable future. In addition to endangered and threatened species, the USFWS has a list of candidate species, which are those for which the USFWS currently has enough information to support a proposal for listing. Section 9 of the ESA and its applicable regulations restrict certain activities with respect to endangered and threatened plants. However, these restrictions are less stringent than those applicable to fish and wildlife species. These provisions prohibit the removal of, malicious damage to, or destruction of any listed plant species "from areas under federal jurisdiction." Listed plants may not be cut, dug up, damaged or destroyed, or removed from any other area (including private lands) in knowing violation of a State law or regulation.

(b) Raptors & Migratory Bird Treaty Act (MBTA). The MBTA (16 United States Code [USC] 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorized the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. The MBTA sets seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703, 50 CFR 21, 50 CFR 10).

(c) U.S. Army Corps of Engineers. Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers is responsible for regulating the discharge of fill material into waters of the U.S. Waters of the U.S. and their lateral limits are defined in 33 CFR (Code of Federal Regulations) Part 328.3 (a) and include streams that are tributary to navigable waters and their adjacent wetlands. Wetlands that are not adjacent to waters of the U.S. are termed "isolated wetlands" and may be subject to U.S. Army Corps of Engineers jurisdiction.

(d) California Department of Fish and Wildlife (CDF&W). The CDF&W has jurisdiction over threatened or endangered species that are formally listed by the State under the California Endangered Species Act (CESA). The CESA is similar to the federal Endangered Species Act both in process and substance; it is intended to provide additional protection to threatened and endangered species in California.

The CESA does not supersede the federal Endangered Species Act, but operates in conjunction with it. Species may be listed as threatened or endangered under both acts (in which case the provisions of both State and federal laws would apply) or under only one act. The California endangered species laws prohibit the taking of any plant listed as threatened, endangered, or rare. In California, an activity on private lands (such as development) will violate Section 9 of the Endangered Species Act if a plant species, listed under both State and federal endangered species laws, is intentionally removed, damaged, or destroyed. Under the State Fish and Game Code, the CDF&W also has jurisdiction over species that are designated as "fully protected." These species are protected against direct impacts. The CDF&W maintains informal lists of species of special concern, which are broadly defined as plants and wildlife that are of concern to CDF&W because of population declines and restricted distributions, and/or they are associated with habitats that are declining in California. These species, as well as threatened and endangered species, are inventoried in the California Natural Diversity Database.

The CDF&W also has jurisdiction over the bed and banks of watercourses (Section 1600 to 1616, Fish and Game Code). The Department requires a Streambed Alteration Permit for the fill or removal of any material from any natural drainage. CDF&W's jurisdiction extends to the top of banks and may include the outer edge of riparian vegetation canopy cover.

(e) California Native Plant Society (CNPS). The CNPS has developed lists of plants of special concern in California. A CNPS List IA plant is a species, subspecies, or variety that is considered to be extinct. A List 1B plant is considered rare, threatened, or endangered in California and elsewhere. A List 2 plant is considered rare, threatened, or endangered in California, but is more common elsewhere. A List 3 plant is a species for which CNPS lacks necessary information to determine if it should be assigned to a list or not. A List 4 plant has a limited distribution in California. All List 1 and List 2 plant species meet the requirements of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the CDF&G Code, and are eligible for State listing. Therefore, List 1 and 2 species should be considered under CEQA. Very few List 3 and List 4 plants are eligible for listing, but may be locally important, and their listing status could be elevated if conditions change.

(f) CEQA Guidelines, Section 15380. Although threatened and endangered species are protected by specific federal and State statutes, the CEQA Guidelines in Section 15380(b) provide that a species not included on the federal or State lists of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in the federal Endangered Species Act and the CDFG Code. This section was included in the CEQA Guidelines primarily to deal with situations in which a public lead agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW. Thus, CEQA provides a lead agency with the ability to protect a species from a project's potential impacts until government agencies have an opportunity to designate the species as protected, if warranted.

(g) Regional Water Quality Control Board. Pursuant to Section 401 of the Clean Water Act, projects that apply for a U.S. Army Corps of Engineers permit for discharge of dredge or fill material, and projects that qualify for a Nationwide Permit, must obtain water quality certification from the Regional Water Quality Control Board (RWQCB) that the project will uphold State water
quality standards. Alternatively, the RWQCB may elect to notify an applicant that the State may issue Waste Discharge Requirements in lieu of a Section 401 certification.

(h) California Coastal Commission. The California Coastal Commission (CCC) is a state regulatory agency whose primary role is the protection of coastal resources. This project is located within the coastal appeal zone, therefore CCC protection measures would apply.

3.0 METHODS

3.1 Records Search

A records search of the California Department of Fish and Wildlife's (CDF&W) Natural Diversity Data Base (October, 2021) was conducted to determine if special-status plant or animal species had been previously reported near the project area. Listed and sensitive wildlife species potentially occurring within seven miles of the project area were assessed for potential habitat or presence in or near the project site.

Special-Status Species and Significant Natural Communities.

The following special-status species and sensitive community types were considered in this evaluation:

- Species that are listed, or designated as candidates for listing, as threatened or endangered under the federal Endangered Species Act;
- Species that are listed, or designated as candidates for listing as rare (plants), threatened, or endangered under the California Endangered Species Act;
- Wildlife species listed by the CDF&W as species of special concern or fully protected species;
- Communities designated by the CDFW to be "significant" natural communities;
- Plant species on List 1A, List 1B, and List 2, in the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California;
- Species that meet the definition of rare or endangered under the California Environmental Quality Act (under Section 15380 of CEQA, a species not included on any formal list "shall nevertheless be considered rare or endangered if the species can be shown to meet the criteria" for listing); and
- Taxa of special concern by local agencies.

3.2 Field Investigation

A field investigation of the project area was conducted in October of 2021. All potential wildlife habitats within the project area and within 1.3 miles around the project area were assessed for their potential for listed wildlife species. Certified Wildlife Biologist Frank Galea and botanist Kyle Wear conducted the field review. The project area was searched for potential wetlands and sensitive plant habitats. Trees and bushes were searched with high-power binoculars for nests.

4.0 RESULTS AND POTENTIAL IMPACTS

4.1 Records Search

The CDF&W Natural Diversity Data Base (CNDDB, 2021) provided a summary of those federal and state-listed and sensitive wildlife and plant species and their mapped locations, reported to have occurred at least once within seven miles of the project site.

A list of those sensitive or listed wildlife species with the most potential to occur in the vicinity of the project area is presented in Table 1, including the common and Latin names for each. Figure 2 maps those species within 1.5 miles. The listing status of each species and if potential habitat (as determined by GBC, based upon a review of habitat available within the project area) was located within or near the project area is also indicated in Table 1.

Additional species which have occurred within seven miles of the project site, but are unlikely to occur locally due to a lack of habitat, as listed in Appendix A.

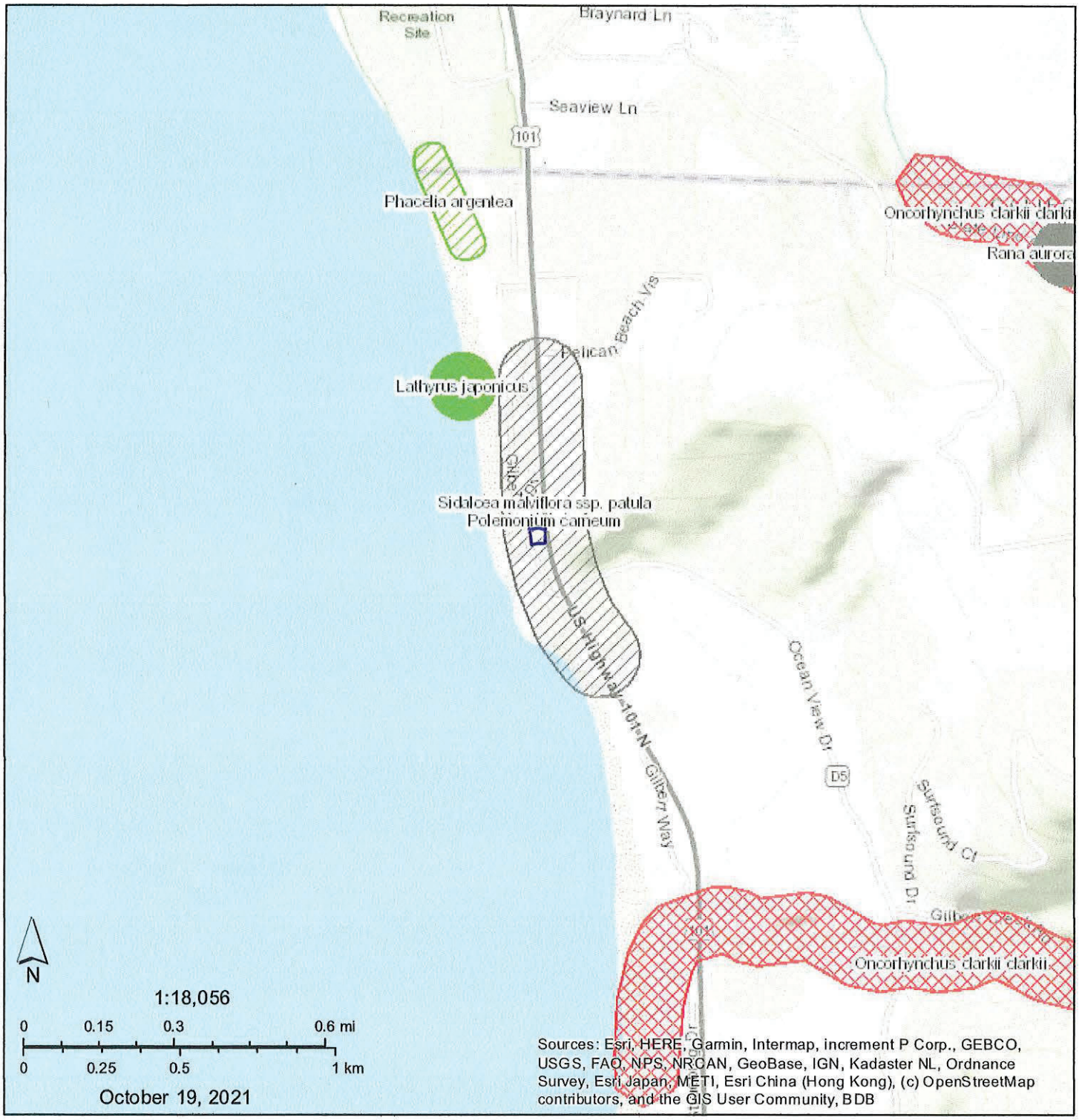
4.2 Field Investigation

The project site was completely impacted by the old restaurant site, including a large parking lot. The footprint of the existing building extended to the edge of the bluff. From the top of the bluff down to the beach, approximately 30 feet, was a stand of Hooker's willow (*Salix hookeriana*). No seeps were evident from the bluff. An access road for the State Park was located to the immediate north.

The old building, which is to be torn down, was relatively intact with no openings visible for bat use. The roof, however, was cedar or redwood shake, which can be utilized by bats as refugia.

The north side of the building was impacted by a large outgrowth of Himalaya berry (*Rubus armeniacus*).

Map of Project Area



California Natural Diversity Database (CNDDB) Commercial [ds85]

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (80m)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (non-specific)
- Terrestrial Comm. (circular)
- Aquatic Comm. (80m)
- Aquatic Comm. (specific)
- Aquatic Comm. (non-specific)
- Aquatic Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's (Commercial only)

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Table 1. Sensitive Wildlife Species Potentially Occurring in proximity to the Proposed Project Area
(From CNDDB 2021 Quad search, USFWS Del Norte County list, and GWC sources)

Common Name	Latin Name	Federal Status	State Status	Breeding Habitat in Project Area?	Forage Habitat in Project Area?
BIRDS					
Northern spotted owl	*Strix occidentalis caurina*	FT	CSC	No	No
Marbled murrelet	*Brachyramphus marmoratus*	FT	CE	No	No
Western Snowy Plover	*Charadrius alexandrinus Nivosus*	FT	CSC	No	No
FISH					
S. OR./N. CA Coho salmon	*Oncorhynchus kisutch*	FT	T	No	No
Coastal cutthroat trout	*Oncorhynchus clarki clarki*	SC	NL	No	No
Summer-run steelhead trout	*Oncorhynchus mykiss irrideus*	None	SCS	No	No
AMPHIBIANS					
Del Norte salamander	*Plethodon elongatus*	SC	CSC	No	No
Southern torrent salamander	*Rhyacotriton variegatus*	SC	CSC	No	No
Tailed frog	*Ascaphus trueii*	SC	CSC	No	No
Northern red-legged frog	*Rana aurora aurora*	NL	CSC	No	No

Codes:

Federal Status
- FE Federally endangered
- FT Federally threatened
- FC Federal candidate for listing
- FSC Federal species of concern
- FPE Federally proposed for endangered listing
- FPT Federally proposed for threatened listing
- NL Not Listed

State Status
- CE California endangered
- CT California threatened
- CCE California candidate for endangered listing
- CSC California species of concern (CDFG)
- CFP California fully protected
- NL Not Listed

4.3 Habitat Analysis and Impact Assessment for Fish and Wildlife

4.3a Threatened or Endangered Species

1. Northern Spotted Owl (NSO): The northern spotted owl is listed as federally threatened and is listed as endangered in California. The spotted owl is not uncommon over most of its range, which in northern California includes late seral conifer forests and mixed-conifer woodlands of the coastal mountains. It occurs locally in old growth and second-growth forests.

NSO prefer large diameter trees or snags within well-shaded stands for nest sites, where they will use old nests, cavities or shaded, broken-topped trees. While NSO close association with old growth has been documented extensively, it also nests in mid- to late-seral forests when stands are highly variable in structure and composition. They prefer an overhead canopy over nests and roost sites for thermal and predator protection and are intolerant to extreme heat, especially for nest sites. NSO hunt in relatively closed canopy forests with open sub-canopies and moderate stem densities.

There is no suitable nesting habitat for NSO on or near the project. The hill across Highway 101 contains stands of mid-seral redwoods, however the habitat is fragmented and is poor habitat for NSO. There are no records of NSO being detected anywhere near the project. This project will have no impact on NSO.

2. Marbled Murrelet (MAMU): The marbled murrelet (MAMU) occurs only in North America, from Alaska south to Santa Cruz, California. This species is federally listed as threatened and state-listed as endangered in California while listed as threatened in Oregon and Washington. The MAMU is closely associated with old-growth and mature forests for nesting and population declines have been attributed in part to loss or modification of forest habitat. Unlike most members of the family Alcidae, MAMU most often nest in trees. MAMU prefer to nest in old-growth and mature coniferous forests throughout most of their range. They also have been found in younger forests with structural elements similar to old growth, such as remnant old-growth trees or younger trees with platforms created by deformities or dwarf mistletoe infestations.

MAMU are best detected at dawn, when birds leave their inland nests, calling to each other as they congregate over the nesting area and then while they fly to the ocean to feed. A stand is considered to potentially be occupied by nesting MAMU if they are observed flying through the stand below canopy level, circling just above the stand, calling while stationary in a tree or observed flying out of or into a tree in the stand. If MAMU are detected over a stand flying a relatively straight path higher than the tallest trees, it does not constitute a sign of occupancy.

This project has no MAMU habitat nor is there suitable habitat for MAMU anywhere near the project site. This project will have no impacts on MAMU.

3. Western snowy plover: The snowy plover is listed as federally threatened and a California species of concern. The snowy plover is a rare bird along the California and Oregon coasts. The snowy plover nests on barren sand beaches, which is available to the west of the project area.

This project should have no impacts on snowy plovers as they are not known to nest on this stretch of beach. Plovers typically require wider beaches for nesting than is found at this location. Plus, there is a relatively high amount of foot traffic on this beach, due to the number of residents at the White Rock resort, which has a stairway leading directly from the resort to the beach.

Snowy plovers did not utilize this beach when the restaurant was directly on the bluff edge. The placement of the new development back from the edge adds an additional buffer should plovers try to utilize this beach for nesting.

4. Salmonids

There is no salmonid habitat in the form of streams or rivers anywhere near the project site. The project is located approximately 2 miles north of the mouth of the Smith River. The Smith River, located two miles to the northeast, contains runs of several species of anadromous fish, including the federally-threatened Coho salmon and the summer run steelhead trout, which is a candidate species for State listing. This project has no connectivity with the Smith River; therefore, this project will have no impacts on salmonids or other fish species in the Smith River.

4.3b Non-Listed Wildlife

Table 1 lists the northern red-legged frog as potentially occurring in the area. The northern red legged frog was relatively common in wetlands, riparian areas and ponds in northern California. Loss of habitat and predation by non-native frogs has reduced or eliminated populations of a close relative, the California red-legged frog (*Rana draytonii*), in southern and central California.

In Del Norte County the northern red-legged frog this is a very common species in a wide range of habitats. This species breeds in moist areas, requiring standing water. It feeds on a variety of invertebrates, and can forage in wet fields, backyards, and in woodlots. It is designated as a Species of Special Concern by the California Department of Fish and Wildlife. Although this species is not a protected species in Del Norte County and is locally relatively abundant, population levels are not doing well in the remainder of its range. Northern red-legged frogs can utilize a variety of habitats for foraging and they are never found far from available, standing water. It is highly unlikely that red-legged frogs would be found in the project area due to the lack of mesic conditions, therefore this project should not have an impact on this species.

Table 1 also includes the Del Norte and torrent salamanders and the tailed frog. Del Norte salamanders are found in a variety of forest types, including redwood, Douglas-fir, montane riparian and montane hardwood-conifer forests to 2,500 feet. Regardless of the forest type, this species requires rocky ground with interstitial spacing which allows for vertical movement to sub-surface refugia. No such habitat is available for this species on or near the project area.

The tailed frog and torrent salamander both require clean, cool flowing water, such as streams and creeks. No such habitat is available for these species on or near the project area.

Several bat species were reported in the CNDDB list, including Thompson's big-eared bat (*Corynorhinus townsendii*), a sensitive species. Bats are known to utilize crawl spaces under shake roofs. This would likely occur in summer months, as during the winter the project site, being next to the ocean, likely does not provide a warm enough refugia for bats to use.

Due to the potential for bat use, it is recommended that a wildlife biologist monitor the demolition of the old building and advise construction crews, if demolition is to occur during summer months, June – September.

Garter snakes were observed on the property, and it is advised that a wildlife biologist review the site immediately prior to demolition of the old building and remove any reptiles or amphibians which might be onsite and move them into the State Park immediately adjacent.

The CNDDB included osprey in the area, however there are no trees of sufficient size on or near the project site for osprey to nest. No nests were observed near the project site. No heron or egret rookeries are known of nearby and none were observed during field surveys.

4.3c Migratory Bird Treaty Act

Potential nesting habitat for birds covered by the Migratory Bird Treaty Act occurs adjacent to the project area in the form of thickets of willow along the west edge. It is therefore recommended that, if construction is to occur during the migratory bird breeding season, February 1 to August 15th, surveys for nesting migratory birds should occur by a qualified biologist in the weeks before the onset of construction. If nesting birds are located adjacent to the construction zone, construction within 300 feet of a nest site should be postponed until the young fledge the nest and are mobile.

4.3d Sensitive Plants

The California Native Plant Society Inventory includes five lists for categorizing plant species of concern. The plants on the CNPS list 1B and 2 are considered rare, endangered, and threatened plants pursuant to Section 15380 of the California Environmental Quality Act (CEQA). The plants on these lists meet the definitions under the Native Plant Protection Act and/or the California Endangered Species Act of the California Department of Fish and Game Code and are eligible for state listing.

The CNDDB, when queried for nine quadrants, provided a list of numerous sensitive plants which have been recorded within seven miles of the project area (Botany Report, Appendix A), including the federally-listed Western lily (*Lilium occidentale*). The western lily requires bogs or fens or wet woodlands, which are not found in the project area. See the Botany Report in Appendix B for an analysis of potential for sensitive plant species.

5.0 POTENTIAL IMPACTS FROM PROJECT

The project site was previously a commercial restaurant, including a large parking lot between the restaurant and the highway. There was no habitat for wildlife species.

Design for a new building include a sixteen-foot setback from the bluff edge. This provides a buffer to the beach and beach communities the original restaurant did not have. The bluff is considered an environmentally sensitive habitat area (ESHA) by the California Coastal Commission (CCC), which normally is provided with a deeper buffer to development. In this case, however, there is not enough room on the parcel, which is limited by the highway and zoning requirements, to provide a deeper buffer. This project is therefore designed with the least impacts to natural resources as possible.

There are no sensitive plant or wildlife communities on the beach below the project site, therefore there would be no impacts to sensitive species. The beach, which is relatively narrow to begin with, has constant foot traffic from the resort located to the immediate south, therefore any sensitive wildlife species would likely not utilize this beach.

6.0 RECCOMENDATIONS FOR RESOURCE PROTECTION

1. Lighting for the new facility should be limited on the beach side of the building. Security lights on the beach side should not be left on all night. Lights of 590 nanometers would be preferable where practical, as well as being as low to the ground as possible, and shielded to prevent light from shining onto the beach as much as possible.
2. Construction should occur outside of the migratory bird breeding season (February 1st to August 15th) unless surveys for migratory bird nests are completed prior to construction and no migratory bird nests are located in proximity to construction.
3. Surveys for reptiles and amphibians should be conducted by a biologist at the proposed construction area immediately before construction. If reptiles or amphibians are found, they should be collected and moved to suitable habitats in the adjacent State Park by the biologist.
4. Demolition of the original building should be overseen by a wildlife biologist to prevent impacts to bat species, if demolition occurs between June and September.

7.0 STAFF QUALIFICATIONS

Habitat assessment and report writing for this project was conducted by Principal Biologist, Frank Galea. Frank is the primary Biological Consultant and owner of Galea Biological Consulting, established in 1989. Frank is certified as a Wildlife Biologist through the Wildlife Society. Frank's qualifications include a Master of Science Degree in Wildlife Management from Humboldt State University and a Bachelor of Science in Zoology from San Diego State University. Frank has been assessing habitat and conducting field surveys for Threatened and Endangered species in Del Norte County for over 30 years. Frank has taken an accredited class on wetland delineation through the Wetland Training Institute, and has successfully completed a Watershed Assessment and Erosion Treatment course through the Salmonid Restoration Federation.

Botanical surveys and wetland assessments were conducted by botanist Kyle Wear. Kyle has a Master of Science Degree in Botany from Humboldt State University and has conducted botanical surveys as a consultant for over twelve years. Kyle is recognized as a highly qualified botanist for sensitive species surveys and assessment by the California Department of Fish and Wildlife. Kyle has also taken an accredited class on wetland delineation through the Wetland Training Institute.

APPENDIX A

CNDDB SEARCH SPECIES LIST

Element_T	Scientific_N	Common_N	Element_C	Federal_St	State_Statu	CDFW_Stat	CA_Rare_P	Quad_Cod
Animals - A	Ascaphus t	Pacific taile	AAABA010	None	None	SSC	-	4112482
Animals - A	Plethodon	Del Norte s	AAAAD120	None	None	WL	-	4112472
Animals - A	Rana auror	northern re	AAABH010	None	None	SSC	-	4112472
Animals - A	Rana boylii	foothill yell	AAABH010	None	Endangere	SSC	-	4112482
Animals - A	Rhyacotrito	southern to	AAAAJ010	None	None	SSC	-	4112482
Animals - B	Circus huds	northern h	ABNKC110	None	None	SSC	-	4112472
Animals - B	Elanus leuc	white-taile	ABNKC060	None	None	FP	-	4112472
Animals - B	Haliaeetus	bald eagle	ABNKC100	Delisted	Endangere	FP	-	4112481
Animals - B	Brachyram	marbled m	ABNNN06(	Threatenec	Endangere	-	-	4112471
Animals - B	Cerorhinca	rhinoceros	ABNNN11(	None	None	WL	-	4112472
Animals - B	Fratercula	tufted puff	ABNNN12(	None	None	SSC	-	4112472
Animals - B	Ptychoram	Cassin's au	ABNNN08(	None	None	SSC	-	4112472
Animals - B	Branta hut	cackling (=/	ABNJB050	Delisted	None	WL	-	4112472
Animals - B	Cypseloide	black swift	ABNUA010	None	None	SSC	-	4112471
Animals - B	Ardea alba	great egret	ABNGA040	None	None	-	-	4112472
Animals - B	Ardea hero	great blue	ABNGA040	None	None	-	-	4112472
Animals - B	Botaurus le	American b	ABNGA010	None	None	-	-	4112472
Animals - B	Egretta thu	snowy egre	ABNGA060	None	None	-	-	4112482
Animals - B	Nycticorax	black-crow	ABNGA110	None	None	-	-	4112482
Animals - B	Charadrius	western sn	ABNNB030	Threatenec	None	SSC	-	4112472
Animals - B	Falco pere	American p	ABNKD060	Delisted	Delisted	FP	-	4112472
Animals - B	Riparia ripa	bank swall	ABPAU080	None	Threatenec	-	-	4112472
Animals - B	Hydrobate	fork-tailed	ABNDC040	None	None	SSC	-	4112472
Animals - B	Pandion ha	osprey	ABNKC010	None	None	WL	-	4112472
Animals - B	Poecile atri	black-capp	ABPAW01(	None	None	WL	-	4112472
Animals - B	Pelecanus	California b	ABNFC010	Delisted	Delisted	FP	-	4112472
Animals - B	Phalacroco	double-cre	ABNFD010	None	None	WL	-	4112482
Animals - B	Coturnicop	yellow rail	ABNME01(	None	None	SSC	-	4112482
Animals - B	Strix occide	Northern S	ABNSB120	Threatenec	Threatenec	-	-	4112471
Animals - B	Selasphoru	rufous hum	ABNUC510	None	None	-	-	4112472
Animals - B	Empidonax	little willow	ABPAE330	None	Endangere	-	-	4112482
Animals - F	Acipenser	green sturg	AFCAA010	Threatenec	None	SSC	-	4112482
Animals - F	Eucyclogob	tidewater g	AFCQN040	Endangere	None	-	-	4112482
Animals - F	Spirinchus	longfin sme	AFCHB030	Candidate	Threatenec	-	-	4112472
Animals - F	Thaleichth	eulachon	AFCHB040	Threatenec	None	-	-	4112482
Animals - F	Entosphen	Pacific lam	AFBAA021(	None	None	SSC	-	4112482
Animals - F	Lampetra r	western br	AFBAA021	None	None	SSC	-	4112482
Animals - F	Oncorhync	coast cutth	AFCHA020	None	None	SSC	-	4112482
Animals - F	Oncorhync	coho salmc	AFCHA020	Threatenec	Threatenec	-	-	4112482
Animals - F	Oncorhync	steelhead -	AFCHA020	None	None	SSC	-	4112482
Animals - F	Oncorhync	chinook sal	AFCHA020	None	None	SSC	-	4112482
Animals - I	Bombus ca	obscure bu	IIHYM2438	None	None	-	-	4112471
Animals - I	Bombus oc	western bu	IIHYM2425	None	None	-	-	4112482
Animals - I	Scaphinotu	Behrens' sr	IICOL4L07(	None	None	-	-	4112471
Animals - I	Atractelmis	Wawona ri	IICOL5801(	None	None	-	-	4112471
Animals - I	Polites mai	mardon ski	IILEP66030	None	None	-	-	4112471

Animals - Ir	Limnephilu	Fort Dick li	IITRI15020	None	None	-	-	4112472
Animals - Ir	Coenonym	Yontocket :	IILEPN6035	None	None	-	-	4112472
Animals - Ir	Speyeria ze	Oregon silv	IILEPJ6087	Threatenec	None	-	-	4112472
Animals - M	Erethizon c	North Ame	AMAFJ010:	None	None	-	-	4112472
Animals - M	Enhydra lut	southern s	AMAJF090:	Threatenec	None	FP	-	4112472
Animals - M	Martes cau	Humboldt ı	AMAJF010:	Threatenec	Endangere	SSC	-	4112472
Animals - M	Pekania pe	Fisher	AMAJF010:	None	None	SSC	-	4112471
Animals - M	Eumetopia	Steller (=nc	AMAJC030	Delisted	None	-	-	4112472
Animals - M	Corynorhin	Townsend'	AMACC08C	None	None	SSC	-	4112472
Animals - M	Lasionycter	silver-haire	AMACC02C	None	None	-	-	4112471
Animals - M	Myotis yun	Yuma myot	AMACC01C	None	None	-	-	4112471
Animals - M	Monadenia	rocky coast	IMGASC70:	None	None	-	-	4112472
Animals - M	Lanx alta	highcap lar	IMGASL70:	None	None	-	-	4112471
Animals - M	Margaritife	western pe	IMBIV2702	None	None	-	-	4112471
Animals - M	Juga chacei	Chace juga	IMGASK41	None	None	-	-	4112471
Animals - M	Pomatiopsi	marsh walk	IMGASJ903	None	None	-	-	4112472
Animals - R	Emys marn	western pc	ARAAD020	None	None	SSC	-	4112472
Community	Coastal Bra	Coastal Bra	CTT52200C	None	None	-	-	4112472
Community	Northern C	Northern C	CTT52110C	None	None	-	-	4112472
Plants - Bry	Fissidens p	minute poc	NBMUS2W	None	None	-	1B.2	4112471
Plants - Lich	Sulcaria spi	twisted hoı	NLT00425E	None	None	-	1B.2	4112472
Plants - Lich	Calicium ac	spiral-spor	NLT000564	None	None	-	2B.2	4112471
Plants - Lich	Usnea long	Methuselal	NLLEC5P42	None	None	-	4.2	4112471
Plants - Lich	Ramalina tl	angel's hai	NLLEC3S34	None	None	-	2B.1	4112471
Plants - Vas	Sagittaria s	Sanford's a	PMALI040C	None	None	-	1B.2	4112472
Plants - Vas	Angelica lu	sea-watch	PDAPI070C	None	None	-	4.2	4112481
Plants - Vas	Glehnia litt	American g	PDAPI1301	None	None	-	4.2	4112472
Plants - Vas	Lomatium l	Howell's lo	PDAPI1B0L	None	None	-	4.3	4112471
Plants - Vas	Lomatium ·	Tracy's lom	PDAPI1B1Y	None	None	-	4.3	4112481
Plants - Vas	Perideridia	California C	PDAPI1N0E	None	None	-	4.2	4112471
Plants - Vas	Sanicula pe	Peck's sani	PDAPI1Z0E	None	None	-	4.3	4112471
Plants - Vas	Tauschia gl	glaucous ta	PDAPI2702	None	None	-	4.3	4112471
Plants - Vas	Asplenium	maidenhair	PPASP021K	None	None	-	2B.1	4112471
Plants - Vas	Antennaria	evergreen (	PDAST0H0S	None	None	-	4.3	4112471
Plants - Vas	Arnica cern	serpentine	PDAST0Q0(	None	None	-	4.3	4112481
Plants - Vas	Arnica spat	Klamath ar	PDAST0Q0I	None	None	-	4.3	4112481
Plants - Vas	Erigeron ce	Siskiyou da	PDAST3M0	None	None	-	4.3	4112471
Plants - Vas	Eucephalus	Siskiyou as	PDASTEC03	None	None	-	4.3	4112471
Plants - Vas	Hespereva	short-leave	PDASTE501	None	None	-	1B.2	4112472
Plants - Vas	Lasthenia c	perennial g	PDAST5L0C	None	None	-	1B.2	4112471
Plants - Vas	Packera bo	seacoast ra	PDAST8H0I	None	None	-	2B.2	4112471
Plants - Vas	Packera ma	Siskiyou M	PDAST8H1:	None	None	-	4.3	4112481
Plants - Vas	Pyrrocoma	Del Norte p	PDASTDT0I	None	None	-	2B.3	4112481
Plants - Vas	Vancouveri	Siskiyou ins	PDBER090:	None	None	-	4.3	4112481
Plants - Vas	Arabis acul	Waldo rock	PDBRA060:	None	None	-	2B.2	4112481
Plants - Vas	Arabis mcd	McDonald'	PDBRA061!	Endangere	Endangere	-	1B.1	4112481
Plants - Vas	Boechera k	Koehler's s	PDBRA060:	None	None	-	1B.3	4112481

Plants - Vas	Cardamine	seaside bitt	PDBRA0K0	None	None	-	2B.1	4112482
Plants - Vas	Cardamine	yellow-tub	PDBRA0K0	None	None	-	3.3	4112482
Plants - Vas	Cochlearia	Greenland	PDBRA0S0	None	None	-	2B.3	4112472
Plants - Vas	Erysimum	bluff wallfl	PDBRA160	None	None	-	1B.2	4112472
Plants - Vas	Streptanth	Howell's je	PDBRA2G0	None	None	-	1B.2	4112481
Plants - Vas	Downingia	Cascade dc	PDCAM06C	None	None	-	2B.2	4112471
Plants - Vas	Sabulina hc	Howell's sa	PDCAR0G0	None	None	-	1B.3	4112471
Plants - Vas	Silene serp	serpentine	PDCAR0U2	None	None	-	1B.2	4112471
Plants - Vas	Calystegia	Butte Coun	PDCON040	None	None	-	4.2	4112471
Plants - Vas	Sedum flav	pale yellow	PDCRA0A0	None	None	-	4.3	4112481
Plants - Vas	Sedum pat	Smith Rive	PDCRA0A2	None	None	-	1B.2	4112471
Plants - Vas	Carex arcta	northern cl	PMCYP030	None	None	-	2B.2	4112472
Plants - Vas	Carex lenti	lagoon sed	PMCYP037	None	None	-	2B.2	4112472
Plants - Vas	Carex lyngl	Lyngbye's s	PMCYP037	None	None	-	2B.2	4112472
Plants - Vas	Carex prati	northern m	PMCYP03B	None	None	-	2B.2	4112472
Plants - Vas	Carex scabi	Siskiyou se	PMCYP03C	None	None	-	4.3	4112471
Plants - Vas	Carex serp	serpentine	PMCYP03K	None	None	-	2B.3	4112471
Plants - Vas	Carex shel	Sheldon's s	PMCYP03C	None	None	-	2B.2	4112472
Plants - Vas	Carex viridi	green yello	PMCYP03E	None	None	-	2B.3	4112472
Plants - Vas	Empetrum	black crowl	PDEMP030	None	None	-	2B.2	4112472
Plants - Vas	Arctostaph	Howell's m	PDERI0423	None	None	-	4.2	4112471
Plants - Vas	Arctostaph	Del Norte r	PDERI0409	None	None	-	4.3	4112471
Plants - Vas	Vaccinium	little-leave	PDERI180Y	None	None	-	2B.2	4112471
Plants - Vas	Hosackia gi	harlequin l	PDFAB2A0	None	None	-	4.2	4112472
Plants - Vas	Lathyrus de	Del Norte p	PDFAB250	None	None	-	4.3	4112472
Plants - Vas	Lathyrus ja	seaside pea	PDFAB250	None	None	-	2B.1	4112472
Plants - Vas	Lathyrus pa	marsh pea	PDFAB250	None	None	-	2B.2	4112472
Plants - Vas	Dicentra fo	Oregon ble	PDFUM04C	None	None	-	4.2	4112471
Plants - Vas	Gentiana s	Mendocinc	PDGEN060	None	None	-	1B.2	4112481
Plants - Vas	Ribes laxifl	trailing bla	PDGRO020	None	None	-	4.3	4112481
Plants - Vas	Phacelia ar	sand dune	PDHYD0C0	None	None	-	1B.1	4112482
Plants - Vas	Romanzoff	Tracy's ron	PDHYD0E0	None	None	-	2B.3	4112472
Plants - Vas	Iris bractea	Siskiyou iris	PMIRI0902	None	None	-	3.3	4112482
Plants - Vas	Iris innomi	Del Norte (	PMIRI090F	None	None	-	4.3	4112482
Plants - Vas	Iris tenax s	Orleans iris	PMIRI090Z	None	None	-	4.3	4112471
Plants - Vas	Iris thomps	Thompson'	PMIRI0912	None	None	-	4.3	4112471
Plants - Vas	Pinguicula	horned but	PDLNT010	None	None	-	2B.2	4112471
Plants - Vas	Erythroniu	Henderson	PMLIL0U0	None	None	-	2B.3	4112471
Plants - Vas	Erythroniu	Howell's fa	PMLIL0U0	None	None	-	1B.3	4112471
Plants - Vas	Erythroniu	giant fawn	PMLIL0U0	None	None	-	2B.2	4112471
Plants - Vas	Lilium bola	Bolander's	PMLIL1A01	None	None	-	4.2	4112471
Plants - Vas	Lilium occi	western lil	PMLIL1A0	Endangere	Endangere	-	1B.1	4112472
Plants - Vas	Lilium pard	Vollmer's li	PMLIL1A0	None	None	-	4.3	4112481
Plants - Vas	Lycopodiur	running-pir	PPLYC0108	None	None	-	4.1	4112472
Plants - Vas	Sidalcea el	Del Norte c	PDMAL110	None	None	-	3.3	4112471
Plants - Vas	Sidalcea m	maple-leav	PDMAL110	None	None	-	4.2	4112481
Plants - Vas	Sidalcea m	Siskiyou ch	PDMAL110	None	None	-	1B.2	4112482

Plants - Va:	Sidalcea or	coast checl	PDMAL110	None	None	-	1B.2		4112482
Plants - Va:	Veratrum ii	Siskiyou fal	PMLIL2504	None	None	-		4.3	4112481
Plants - Va:	Veratrum ii	Siskiyou fal	PMLIL2504	None	None	-		4.3	4112471
Plants - Va:	Monotropa	ghost-pipe	PDMON03(	None	None	-	2B.2		4112471
Plants - Va:	Pityopus ca	California p	PDMON05(	None	None	-		4.2	4112471
Plants - Va:	Lewisia op	opposite-le	PDPOR040	None	None	-	2B.2		4112471
Plants - Va:	Montia hov	Howell's m	PDPOR050	None	None	-	2B.2		4112481
Plants - Va:	Lysimachia	arctic starfl	PDPRI0A02	None	None	-	2B.2		4112472
Plants - Va:	Abronia um	pink sand-v	PDNYC010(	None	None	-	1B.1		4112472
Plants - Va:	Epilobium i	Siskiyou M(	PDONA060	None	None	-		4.3	4112471
Plants - Va:	Oenothera	Wolf's ever	PDONA0C1	None	None	-	1B.1		4112472
Plants - Va:	Cypripediu	California l:	PMORC0Q(	None	None	-		4.2	4112471
Plants - Va:	Listera cor	heart-leave	PMORC1N(	None	None	-		4.2	4112482
Plants - Va:	Piperia can	white-flow	PMORC1X(	None	None	-	1B.2		4112471
Plants - Va:	Castilleja a	johnny-nip	PDSCR0D4(	None	None	-		4.2	4112472
Plants - Va:	Castilleja b	short-lobec	PDSCR0D1!	None	None	-		4.2	4112481
Plants - Va:	Castilleja el	Siskiyou pa	PDSCR0D2:	None	None	-	2B.2		4112481
Plants - Va:	Castilleja li	Oregon coa	PDSCR0D0:	None	None	-	2B.2		4112482
Plants - Va:	Kopsiopsis	small grour	PDORO010	None	None	-	2B.3		4112481
Plants - Va:	Oxalis suks	Suksdorf's '	PDOXA010	None	None	-		4.3	4112481
Plants - Va:	Anthoxantl	vanilla-gras	PMPOA35(	None	None	-	2B.3		4112482
Plants - Va:	Calamagro:	Thurber's r	PMPOA17(	None	None	-	2B.1		4112481
Plants - Va:	Pleuropogc	nodding se	PMPOA4Y(	None	None	-		4.2	4112482
Plants - Va:	Poa piperi	Piper's blue	PMPOA4Z2	None	None	-		4.3	4112481
Plants - Va:	Gilia capita	Pacific gilia	PDPLM040	None	None	-	1B.2		4112482
Plants - Va:	Gilia millefi	dark-eyed g	PDPLM041	None	None	-	1B.2		4112482
Plants - Va:	Polemoniu	Oregon pol	PDPLM0E0	None	None	-	2B.2		4112482
Plants - Va:	Eriogonum	Del Norte b	PDPGN084	None	None	-	2B.2		4112472
Plants - Va:	Eriogonum	Waldo wild	PDPGN084	None	None	-	2B.2		4112481
Plants - Va:	Eriogonum	ternate bu(	PDPGN085	None	None	-		4.3	4112481
Plants - Va:	Potamoget	fibrous por	PMPOT03(	None	None	-	2B.3		4112472
Plants - Va:	Primula pa	beautiful sl	PDPRI030D	None	None	-		4.2	4112472
Plants - Va:	Moneses u	woodnymp	PDPYR020:	None	None	-	2B.2		4112472
Plants - Va:	Coptis lacir	Oregon gol	PDRAN0A0	None	None	-		4.2	4112471
Plants - Va:	Horkelia se	silky horkel	PDROS0W(	None	None	-		4.3	4112471
Plants - Va:	Sanguisorb	great burn(	PDROS1L0(	None	None	-	2B.2		4112472
Plants - Va:	Salix delno	Del Norte v	PDSAL023F	None	None	-		4.3	4112481
Plants - Va:	Darlingtoni	California p	PDSAR010:	None	None	-		4.2	4112481
Plants - Va:	Cascadia n	Nuttall's sa	PDSAX0U1(	None	None	-	2B.1		4112471
Plants - Va:	Chrysosple	Pacific gold	PDSAX070:	None	None	-		4.3	4112471
Plants - Va:	Micranthes	Marshall's :	PDSAX0U0:	None	None	-		4.3	4112471
Plants - Va:	Mitellastra	leafy-stem	PDSAX0N0:	None	None	-		4.2	4112481
Plants - Va:	Tiarella trif	trifoliate la	PDSAX100:	None	None	-		3.2	4112471
Plants - Va:	Viola langs	Langsdorf's	PDVIO041(	None	None	-	2B.1		4112472
Plants - Va:	Viola palus	alpine mar:	PDVIO041(	None	None	-	2B.2		4112472
Plants - Va:	Viola primu	western wl	PDVIO040Y	None	None	-	1B.2		4112471

Quad_Nam	Data_Statu	Taxonomic_Sort
SMITH RIVI	Mapped ar	Animals - Amphibians - Ascaphidae - Ascaphus truei
CRESCENT	Unprocesse	Animals - Amphibians - Plethodontidae - Plethodon elongatus
CRESCENT	Mapped ar	Animals - Amphibians - Ranidae - Rana aurora
SMITH RIVI	Mapped ar	Animals - Amphibians - Ranidae - Rana boylii
SMITH RIVI	Mapped ar	Animals - Amphibians - Rhyacotritonidae - Rhyacotriton variegatus
CRESCENT	Mapped	Animals - Birds - Accipitridae - Circus hudsonius
CRESCENT	Mapped ar	Animals - Birds - Accipitridae - Elanus leucurus
HIGH DIVIC	Mapped ar	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
HIOUCHI	Mapped	Animals - Birds - Alcidae - Brachyramphus marmoratus
CRESCENT	Mapped ar	Animals - Birds - Alcidae - Cerorhinca monocerata
CRESCENT	Mapped ar	Animals - Birds - Alcidae - Fratercula cirrhata
CRESCENT	Unprocesse	Animals - Birds - Alcidae - Ptychoramphus aleuticus
CRESCENT	Mapped	Animals - Birds - Anatidae - Branta hutchinsii leucopareia
HIOUCHI	Mapped	Animals - Birds - Apodidae - Cypseloides niger
CRESCENT	Unprocesse	Animals - Birds - Ardeidae - Ardea alba
CRESCENT	Mapped ar	Animals - Birds - Ardeidae - Ardea herodias
CRESCENT	Unprocesse	Animals - Birds - Ardeidae - Botaurus lentiginosus
SMITH RIVI	Mapped ar	Animals - Birds - Ardeidae - Egretta thula
SMITH RIVI	Unprocesse	Animals - Birds - Ardeidae - Nycticorax nycticorax
CRESCENT	Mapped ar	Animals - Birds - Charadriidae - Charadrius nivosus nivosus
CRESCENT	Unprocesse	Animals - Birds - Falconidae - Falco peregrinus anatum
CRESCENT	Unprocesse	Animals - Birds - Hirundinidae - Riparia riparia
CRESCENT	Mapped ar	Animals - Birds - Hydrobatidae - Hydrobates furcatus
CRESCENT	Mapped ar	Animals - Birds - Pandionidae - Pandion haliaetus
CRESCENT	Unprocesse	Animals - Birds - Paridae - Poecile atricapillus
CRESCENT	Unprocesse	Animals - Birds - Pelecanidae - Pelecanus occidentalis californicus
SMITH RIVI	Mapped ar	Animals - Birds - Phalacrocoracidae - Phalacrocorax auritus
SMITH RIVI	Mapped	Animals - Birds - Rallidae - Coturnicops noveboracensis
HIOUCHI	Mapped	Animals - Birds - Strigidae - Strix occidentalis caurina
CRESCENT	Unprocesse	Animals - Birds - Trochilidae - Selasphorus rufus
SMITH RIVI	Mapped ar	Animals - Birds - Tyrannidae - Empidonax traillii brewsteri
SMITH RIVI	Unprocesse	Animals - Fish - Acipenseridae - Acipenser medirostris
SMITH RIVI	Mapped ar	Animals - Fish - Gobiidae - Eucyclogobius newberryi
CRESCENT	Unprocesse	Animals - Fish - Osmeridae - Spirinchus thaleichthys
SMITH RIVI	Mapped ar	Animals - Fish - Osmeridae - Thaleichthys pacificus
SMITH RIVI	Unprocesse	Animals - Fish - Petromyzontidae - Entosphenus tridentatus
SMITH RIVI	Unprocesse	Animals - Fish - Petromyzontidae - Lampetra richardsoni
SMITH RIVI	Mapped ar	Animals - Fish - Salmonidae - Oncorhynchus clarkii clarkii
SMITH RIVI	Unprocesse	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 2
SMITH RIVI	Unprocesse	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 1
SMITH RIVI	Unprocesse	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 14
HIOUCHI	Mapped	Animals - Insects - Apidae - Bombus caliginosus
SMITH RIVI	Mapped ar	Animals - Insects - Apidae - Bombus occidentalis
HIOUCHI	Mapped	Animals - Insects - Carabidae - Scaphinotus behrensi
HIOUCHI	Mapped	Animals - Insects - Elmidae - Atractelmis wawona
HIOUCHI	Mapped	Animals - Insects - Hesperiidae - Polites mardon

CRESCENT	Mapped	Animals - Insects - Limnephilidae - Limnephilus atercus
CRESCENT	Mapped	Animals - Insects - Nymphalidae - Coenonympha tullia yontockett
CRESCENT	Mapped ar	Animals - Insects - Nymphalidae - Speyeria zerene hippolyta
CRESCENT	Mapped ar	Animals - Mammals - Erethizontidae - Erethizon dorsatum
CRESCENT	Unprocesse	Animals - Mammals - Mustelidae - Enhydra lutris nereis
CRESCENT	Mapped	Animals - Mammals - Mustelidae - Martes caurina humboldtensis
HIOUCHI	Mapped	Animals - Mammals - Mustelidae - Pekania pennanti
CRESCENT	Mapped	Animals - Mammals - Otariidae - Eumetopias jubatus
CRESCENT	Unprocesse	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
HIOUCHI	Mapped	Animals - Mammals - Vespertilionidae - Lasionycteris noctivagans
HIOUCHI	Mapped	Animals - Mammals - Vespertilionidae - Myotis yumanensis
CRESCENT	Mapped ar	Animals - Mollusks - Bradybaenidae - Monadenia fidelis pronotis
HIOUCHI	Mapped	Animals - Mollusks - Lymnaeidae - Lanx alta
HIOUCHI	Mapped ar	Animals - Mollusks - Margaritiferidae - Margaritifera falcata
HIOUCHI	Mapped	Animals - Mollusks - Pleuroceridae - Juga chacei
CRESCENT	Unprocesse	Animals - Mollusks - Pomatiopsidae - Pomatiopsis chacei
CRESCENT	Mapped	Animals - Reptiles - Emydidae - Emys marmorata
CRESCENT	Mapped	Community - Terrestrial - Coastal Brackish Marsh
CRESCENT	Mapped	Community - Terrestrial - Northern Coastal Salt Marsh
HIOUCHI	Mapped	Plants - Bryophytes - Fissidentaceae - Fissidens pauperculus
CRESCENT	Mapped	Plants - Lichens - Alectoriaceae - Sulcaria spiralifera
HIOUCHI	Mapped	Plants - Lichens - Caliciaceae - Calicium adspersum
HIOUCHI	Mapped ar	Plants - Lichens - Parmeliaceae - Usnea longissima
HIOUCHI	Mapped	Plants - Lichens - Ramalinaceae - Ramalina thrausta
CRESCENT	Mapped	Plants - Vascular - Alismataceae - Sagittaria sanfordii
HIGH DIVIL	Unprocesse	Plants - Vascular - Apiaceae - Angelica lucida
CRESCENT	Unprocesse	Plants - Vascular - Apiaceae - Glehnia littoralis ssp. leiocarpa
HIOUCHI	Unprocesse	Plants - Vascular - Apiaceae - Lomatium howellii
HIGH DIVIL	Unprocesse	Plants - Vascular - Apiaceae - Lomatium tracyi
HIOUCHI	Unprocesse	Plants - Vascular - Apiaceae - Perideridia gairdneri ssp. gairdneri
HIOUCHI	Unprocesse	Plants - Vascular - Apiaceae - Sanicula peckiana
HIOUCHI	Unprocesse	Plants - Vascular - Apiaceae - Tauschia glauca
HIOUCHI	Mapped	Plants - Vascular - Aspleniaceae - Asplenium trichomanes ssp. trichomanes
HIOUCHI	Unprocesse	Plants - Vascular - Asteraceae - Antennaria suffrutescens
HIGH DIVIL	Unprocesse	Plants - Vascular - Asteraceae - Arnica cernua
HIGH DIVIL	Unprocesse	Plants - Vascular - Asteraceae - Arnica spathulata
HIOUCHI	Unprocesse	Plants - Vascular - Asteraceae - Erigeron cervinus
HIOUCHI	Unprocesse	Plants - Vascular - Asteraceae - Eucephalus glabratus
CRESCENT	Mapped ar	Plants - Vascular - Asteraceae - Hesperevax sparsiflora var. brevifolia
HIOUCHI	Mapped	Plants - Vascular - Asteraceae - Lasthenia californica ssp. macrantha
HIOUCHI	Mapped ar	Plants - Vascular - Asteraceae - Packera bolanderi var. bolanderi
HIGH DIVIL	Unprocesse	Plants - Vascular - Asteraceae - Packera macounii
HIGH DIVIL	Mapped	Plants - Vascular - Asteraceae - Pyrrocoma racemosa var. congesta
HIGH DIVIL	Unprocesse	Plants - Vascular - Berberidaceae - Vancouveria chrysantha
HIGH DIVIL	Mapped	Plants - Vascular - Brassicaceae - Arabis aculeolata
HIGH DIVIL	Mapped	Plants - Vascular - Brassicaceae - Arabis mcdonaldiana
HIGH DIVIL	Mapped	Plants - Vascular - Brassicaceae - Boechera koehleri

SMITH RIVI	Unprocesse	Plants - Vascular - Brassicaceae - Cardamine angulata
SMITH RIVI	Mapped	Plants - Vascular - Brassicaceae - Cardamine nuttallii var. gemmata
CRESCENT	Mapped	Plants - Vascular - Brassicaceae - Cochlearia groenlandica
CRESCENT	Mapped ar	Plants - Vascular - Brassicaceae - Erysimum concinnum
HIGH DIVIL	Mapped ar	Plants - Vascular - Brassicaceae - Streptanthus howellii
HIOUCHI	Mapped	Plants - Vascular - Campanulaceae - Downingia willamettensis
HIOUCHI	Mapped ar	Plants - Vascular - Caryophyllaceae - Sabulina howellii
HIOUCHI	Mapped ar	Plants - Vascular - Caryophyllaceae - Silene serpentinicola
HIOUCHI	Mapped ar	Plants - Vascular - Convolvulaceae - Calystegia atriplicifolia ssp. buttensis
HIGH DIVIL	Unprocesse	Plants - Vascular - Crassulaceae - Sedum flavidum
HIOUCHI	Mapped	Plants - Vascular - Crassulaceae - Sedum patens
CRESCENT	Mapped	Plants - Vascular - Cyperaceae - Carex arcta
CRESCENT	Mapped	Plants - Vascular - Cyperaceae - Carex lenticularis var. limnophila
CRESCENT	Mapped	Plants - Vascular - Cyperaceae - Carex lyngbyei
CRESCENT	Mapped	Plants - Vascular - Cyperaceae - Carex praticola
HIOUCHI	Unprocesse	Plants - Vascular - Cyperaceae - Carex scabriuscula
HIOUCHI	Mapped ar	Plants - Vascular - Cyperaceae - Carex serpenticola
CRESCENT	Unprocesse	Plants - Vascular - Cyperaceae - Carex sheldonii
CRESCENT	Mapped	Plants - Vascular - Cyperaceae - Carex viridula ssp. viridula
CRESCENT	Mapped	Plants - Vascular - Empetraceae - Empetrum nigrum
HIOUCHI	Unprocesse	Plants - Vascular - Ericaceae - Arctostaphylos hispidula
HIOUCHI	Unprocesse	Plants - Vascular - Ericaceae - Arctostaphylos nortensis
HIOUCHI	Mapped	Plants - Vascular - Ericaceae - Vaccinium scoparium
CRESCENT	Unprocesse	Plants - Vascular - Fabaceae - Hosackia gracilis
CRESCENT	Unprocesse	Plants - Vascular - Fabaceae - Lathyrus delnorticus
CRESCENT	Mapped	Plants - Vascular - Fabaceae - Lathyrus japonicus
CRESCENT	Mapped ar	Plants - Vascular - Fabaceae - Lathyrus palustris
HIOUCHI	Unprocesse	Plants - Vascular - Fumariaceae - Dicentra formosa ssp. oregana
HIGH DIVIL	Mapped ar	Plants - Vascular - Gentianaceae - Gentiana setigera
HIGH DIVIL	Unprocesse	Plants - Vascular - Grossulariaceae - Ribes laxiflorum
SMITH RIVI	Mapped ar	Plants - Vascular - Hydrophyllaceae - Phacelia argentea
CRESCENT	Mapped ar	Plants - Vascular - Hydrophyllaceae - Romanzoffia tracyi
SMITH RIVI	Unprocesse	Plants - Vascular - Iridaceae - Iris bracteata
SMITH RIVI	Unprocesse	Plants - Vascular - Iridaceae - Iris innominata
HIOUCHI	Unprocesse	Plants - Vascular - Iridaceae - Iris tenax ssp. klamathensis
HIOUCHI	Unprocesse	Plants - Vascular - Iridaceae - Iris thompsonii
HIOUCHI	Mapped ar	Plants - Vascular - Lentibulariaceae - Pinguicula macroceras
HIOUCHI	Mapped	Plants - Vascular - Liliaceae - Erythronium hendersonii
HIOUCHI	Mapped	Plants - Vascular - Liliaceae - Erythronium howellii
HIOUCHI	Mapped ar	Plants - Vascular - Liliaceae - Erythronium oregonum
HIOUCHI	Unprocesse	Plants - Vascular - Liliaceae - Lilium bolanderi
CRESCENT	Mapped ar	Plants - Vascular - Liliaceae - Lilium occidentale
HIGH DIVIL	Unprocesse	Plants - Vascular - Liliaceae - Lilium pardalinum ssp. vollmeri
CRESCENT	Unprocesse	Plants - Vascular - Lycopodiaceae - Lycopodium clavatum
HIOUCHI	Unprocesse	Plants - Vascular - Malvaceae - Sidalcea elegans
HIGH DIVIL	Unprocesse	Plants - Vascular - Malvaceae - Sidalcea malachroides
SMITH RIVI	Mapped	Plants - Vascular - Malvaceae - Sidalcea malviflora ssp. patula

SMITH RIVI	Mapped	Plants - Vascular - Malvaceae - Sidalcea oregana ssp. eximia
HIGH DIVIC	Unprocesse	Plants - Vascular - Melanthiaceae - Veratrum insolitum
HIOUCHI	Unprocesse	Plants - Vascular - Melanthiaceae - Veratrum insolitum
HIOUCHI	Mapped ar	Plants - Vascular - Monotropaceae - Monotropa uniflora
HIOUCHI	Unprocesse	Plants - Vascular - Monotropaceae - Pityopus californicus
HIOUCHI	Mapped ar	Plants - Vascular - Montiaceae - Lewisia oppositifolia
HIGH DIVIC	Mapped ar	Plants - Vascular - Montiaceae - Montia howellii
CRESCENT	Mapped	Plants - Vascular - Myrsinaceae - Lysimachia europaea
CRESCENT	Mapped	Plants - Vascular - Nyctaginaceae - Abronia umbellata var. breviflora
HIOUCHI	Unprocesse	Plants - Vascular - Onagraceae - Epilobium rigidum
CRESCENT	Mapped ar	Plants - Vascular - Onagraceae - Oenothera wolfii
HIOUCHI	Unprocesse	Plants - Vascular - Orchidaceae - Cypripedium californicum
SMITH RIVI	Unprocesse	Plants - Vascular - Orchidaceae - Listera cordata
HIOUCHI	Mapped	Plants - Vascular - Orchidaceae - Piperia candida
CRESCENT	Unprocesse	Plants - Vascular - Orobanchaceae - Castilleja ambigua var. ambigua
HIGH DIVIC	Unprocesse	Plants - Vascular - Orobanchaceae - Castilleja brevilobata
HIGH DIVIC	Mapped	Plants - Vascular - Orobanchaceae - Castilleja elata
SMITH RIVI	Mapped	Plants - Vascular - Orobanchaceae - Castilleja litoralis
HIGH DIVIC	Mapped	Plants - Vascular - Orobanchaceae - Kopsiopsis hookeri
HIGH DIVIC	Unprocesse	Plants - Vascular - Oxalidaceae - Oxalis suksdorfii
SMITH RIVI	Mapped ar	Plants - Vascular - Poaceae - Anthoxanthum nitens ssp. nitens
HIGH DIVIC	Mapped	Plants - Vascular - Poaceae - Calamagrostis crassiglumis
SMITH RIVI	Unprocesse	Plants - Vascular - Poaceae - Pleuropogon refractus
HIGH DIVIC	Unprocesse	Plants - Vascular - Poaceae - Poa piperi
SMITH RIVI	Mapped	Plants - Vascular - Polemoniaceae - Gilia capitata ssp. pacifica
SMITH RIVI	Mapped	Plants - Vascular - Polemoniaceae - Gilia millefoliata
SMITH RIVI	Mapped	Plants - Vascular - Polemoniaceae - Polemonium carneum
CRESCENT	Mapped	Plants - Vascular - Polygonaceae - Eriogonum nudum var. paralinum
HIGH DIVIC	Mapped ar	Plants - Vascular - Polygonaceae - Eriogonum pendulum
HIGH DIVIC	Unprocesse	Plants - Vascular - Polygonaceae - Eriogonum ternatum
CRESCENT	Mapped	Plants - Vascular - Potamogetonaceae - Potamogeton foliosus ssp. fibrillosus
CRESCENT	Unprocesse	Plants - Vascular - Primulaceae - Primula pauciflora
CRESCENT	Mapped	Plants - Vascular - Pyrolaceae - Moneses uniflora
HIOUCHI	Mapped ar	Plants - Vascular - Ranunculaceae - Coptis laciniata
HIOUCHI	Unprocesse	Plants - Vascular - Rosaceae - Horkelia sericata
CRESCENT	Mapped	Plants - Vascular - Rosaceae - Sanguisorba officinalis
HIGH DIVIC	Unprocesse	Plants - Vascular - Salicaceae - Salix delnortensis
HIGH DIVIC	Unprocesse	Plants - Vascular - Sarraceniaceae - Darlingtonia californica
HIOUCHI	Mapped	Plants - Vascular - Saxifragaceae - Cascadia nuttallii
HIOUCHI	Unprocesse	Plants - Vascular - Saxifragaceae - Chrysosplenium glechomifolium
HIOUCHI	Unprocesse	Plants - Vascular - Saxifragaceae - Micranthes marshallii
HIGH DIVIC	Unprocesse	Plants - Vascular - Saxifragaceae - Mitellastra caulescens
HIOUCHI	Unprocesse	Plants - Vascular - Saxifragaceae - Tiarella trifoliata var. trifoliata
CRESCENT	Mapped	Plants - Vascular - Violaceae - Viola langsdorffii
CRESCENT	Mapped	Plants - Vascular - Violaceae - Viola palustris
HIOUCHI	Mapped	Plants - Vascular - Violaceae - Viola primulifolia ssp. occidentalis

APPENDIX A

BOTANICAL REPORT

Botanical Resources Assessment

Nautical Inn
16850 Hwy 101 (APN: 101-070-022)

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October 2021

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A. Site Plan
B. NRCS Soil Map
C. Special Status Natural Community Scoping List
D. Photos of the Project Area

1. INTRODUCTION

This assessment was conducted at the Nautical Inn located at 16850 Hwy 101 (APN: 101-070-022) near Smith River to identify special status plants and natural communities that would qualify as Environmentally Sensitive Habitat Areas (ESHA**)** that could be impact by the proposed development on the property. This is not a formal botanical survey. The site visit was too late in the season to conduct a floristic survey.

The proposed project includes removal of the existing restaurant and construction of a new beach front motel. The project also includes accessory structures, parking, septic, and stormwater improvements (Appendix A).

2. DEFINITIONS

2.1. Environmentally Sensitive Habitat Area (ESHA)

The California Coastal Act (CCA) Defines ESHA 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."

Sensitive botanical resources including populations of rare, threated, and endangered plants and special status plant communities are considered ESHAs under the CCA.

2.2. Special Status Plants

Special status plants include those listed as rare, threatened, or endangered under the federal Endangered Species Act and/or the California Endangered Species Act. Additionally, impacts to taxa with California Rare Plant Ranks (CRPR) of 1A, 1B, 2A, and 2B must be analyzed in environmental documents related to the California Environmental Quality Act (CEQA), or those considered functionally equivalent to CEQA. Impacts to plants with CRPRs of 3 and 4 should also addressed. Protection measures for populations of these taxa may warranted if they are determined to have local or biological significance.

2.3. Special Status Plant Communities

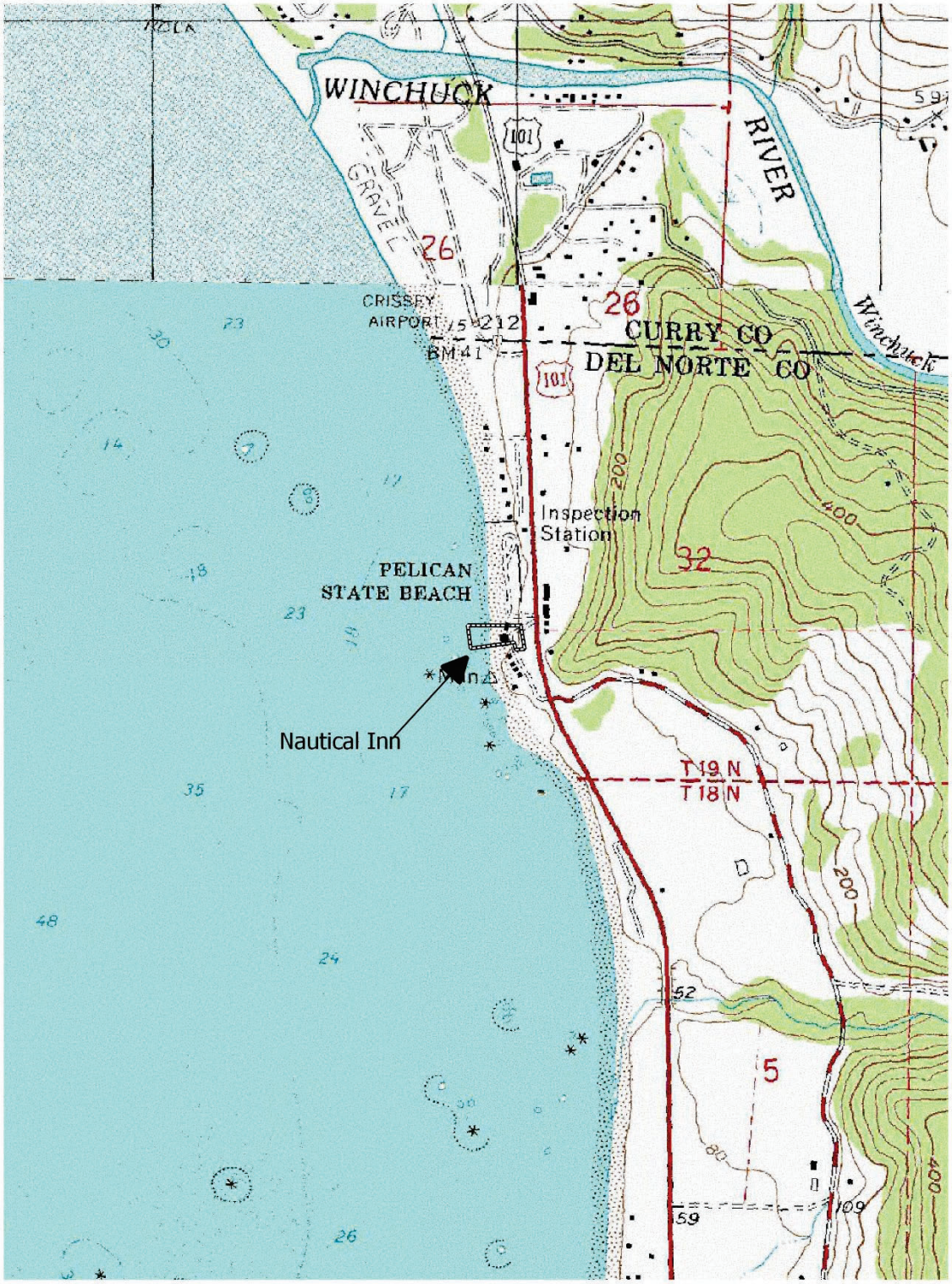
Special status plant communities are communities with limited distribution that may be vulnerable to environmental impacts. Updated information on California natural communities, including rarity rankings, is provided in *A Manual of California Vegetation Online Edition* (CNPS 2021a). Natural communities with G or S ranks of 3 or lower are considered sensitive.

3. ENVIRONMENTAL SETTING

3.1. Project Location

The parcel is located approximately 0.5 miles south of the Oregon border on the Smith River USGS quadrangle in Del North County (Figure 1).

Figure 1. Location Map.



3.2. Soil, Topography, and Hydrology

The soil mapped on the western portion of the parcel is Oxyaquic Udipsamments (271) (USDA, NRCS 2021) (Appendix B). This soil is composed of beach sand and gravel. The eastern portion of the parcel in mapped as Winchuck silt loan (274), which is composed of alluvium from mixed sources. The eastern portion of the parcel is on a relatively flat coastal terrace at approximately 40 feet above sea level. The western portion of the parcel includes a steep coastal bluff that drops to the beach and intertidal area.

3.3. Vegetation

The eastern portion of the parcel includes the existing Nautical Inn and asphalt parking area. The disturbed areas adjacent to the parking lot are predominantly non-native vegetation with Himalayan blackberry (*Rubus armeniacus*), Pampas grass (*Cortaderia jubata*), cotoneaster (*Cotoneaster* spp.), English plantain (*Plantago lanceolata*), and Queen Anne's lace (*Daucus carota*). The western edge of the terrace behind the current inn and mowed lawn includes a hedge of escallonia (*Escallonia rubra*). The bluff is dominated by Hooker willow (*Salix hookeriana*). The vegetation below the bluff on the upper beach includes European beachgrass (*Ammophilla arenaria*), sea rocket (*Cakile maritima*), and native dune plants including, sea lyme grass (*Elymus mollis* ssp. *mollis*), beach bur (*Ambrosia chamissonis*), and beach morning glory (*Calystegia soldanella*).

A list of plants observed on the October 9, 2021, site visit is provided in Table 1. This list does not represent a floristic botanical survey according to *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018) because many common and special status plants are not evident in October.

Table 1. Plant List (Taxa recorded on October 9, 2021).

Scientific Name	Common Name
Abronia latifolia	yellow sand verbena
Achillea millefolium	common yarrow
Agrostis sp.	bent grass
Ambrosia chamissonis	beach bur
Ammophilla arenaria	European beachgrass
Anthoxanthum odoratum	sweet vernal grass
Cakile maritima	sea rocket
Calystegia soldanella	beach morning glory
Carex obnupta	slough sedge
Ceanothus thyrsiflorus	blue blossom
Cordyline australis	cabbage tree
Cortaderia jubata	pampas grass
Cotneaster panosa	cotoneaster
Cotoneaster franchetii	cotoneaster
Daucus carota	Queen Anne's lace

Scientific Name	Common Name
Elymus mollis ssp. mollis (Leymus mollis)	sea lyme grass (American dune grass)
Equisetum telmateia ssp. *braunii*	giant horsetail
Escallonia rubra	escallonia
Euphorbia peplus	petty spurge
Fragaria chiloensis	beach strawberry
Hedera helix	English ivy
Holcus lanatus	common velvet grass
Hypochaeris radicata	hairy cat's-ear
Iris douglasiana	Douglas iris
Lepidium sp.	peppergrass or pepperwort
Lonicera involucrata var. ledebourii	black twinberry
Malva nicaeenis	bull mallow
Marah oreganus	coast man-root
Picea sitchensis	Sitka spruce
Plantago lanceolata	English plantain
Polygonum aviculare	prostrate knotweed
Polystichum munitum	sword fern
Pseudognaphalium luteoalbum	weedy cudweed
Raphanus sativus	wild radish
Rubus armeniacus	Himalayan blackberry
Rubus ursinus	California blackberry
Rumex acetosella	sheep sorrel
Rumex crispus	curly dock
Salix hookeriana	Hooker's willow
Senecio jacobaea	tansy ragwort
Sonchus oleraceus	common sow thistle
Stachys ajugoides	hedge nettle
Symphyotichum chilense	California aster
Toxicodendron diversilobum	poison-oak
Tropaeolum majus	garden nasturtium

4. METHODS

4.1. Scoping

A list of special status plants that could potentially occur on the property was generated by consulting the *California Natural Diversity Database* (CDFW 2021a) and the CNPS *Inventory of Rare and Endangered Plants* (CNPS 2021b) (Table 2). Most of the plants on the scoping list occur in habitat that is not present in the project area including serpentine soils, wetlands, and more inland and higher elevation habitat. Twenty-five taxa were considered to have at least moderate potential to occur on the parcel. These species are associated with coastal dunes,

coastal bluffs, and similar habitat. Of primary consideration are plants with CRPRs of 1 and 2, as these species must be addressed in CEQA review and are considered ESHA under the CCA.

Table 2. Special Status Plant Scoping List

Scientific Name **Common Name**	**Listing Status**	**Blooming Period**	**Habitat**	**Potential to Occur in Project Area**
Abronia umbellata var. breviflora pink sand-verbena	1B.1	Jun-Oct	Coastal dunes	High-on strand
Angelica lucida sea-watch	4.2	Apr-Sep	Coastal bluff scrub, Coastal dunes, Coastal scrub, Marshes and swamps	High-on coastal bluff
Antennaria suffrutescens evergreen everlasting	4.3	Jan-Jul	Lower montane coniferous forest (Serpentinite)	None-occurs on serpentine
Anthoxanthum nitens ssp. nitens vanilla-grass	2B.3	Apr-Jul	Meadows and seeps	Unlikely-occurs in wetlands
Arabis aculeolata Waldo rockcress	2B.2	Apr-Jun	Broadleafed upland forest, Lower montane coniferous forest, Upper montane coniferous forest- Serpentinite	None-occurs on serpentine
Arabis mcdonaldiana McDonald's rockcress	1B.1, CE, FE	May-Jul	Lower montane coniferous forest, Upper montane coniferous forest- Serpentinite	None-occurs on serpentine.
Arctostaphylos hispidula Howell's manzanita	4.2	Mar-Apr	Chaparral (Sandstone, serpentinite)	None-occurs on serpentine
Arctostaphylos nortensis Del Norte manzanita	4.3	Feb	Chaparral, Lower montane coniferous forest	Unlikely-occurs in more inland/higher elevation habitat
Arnica cernua serpentine arnica	4.3	Apr-Jul	Lower montane coniferous forest (serpentinite)	None-occurs on serpentine
Arnica spathulata Klamath arnica	4.3	May-Aug	Lower montane coniferous forest (serpentinite)	None-occurs on serpentine
Asplenium trichomanes ssp. trichomanes maidenhair spleenwort	2B.1	May-Jul	Lower montane coniferous forest (rocky)	Unlikely-occurs in more inland/higher elevation habitat
Boechera koehleri Koehler's stipitate rockcress	1B.3	(Mar)Apr-Jul	Chaparral, Lower montane coniferous forest- serpentinite, rocky	None-occurs on serpentine
Calamagrostis crassiglumis Thurber's reed grass	2B.1	May-Aug	Coastal scrub (mesic), Marshes and swamps (freshwater)	Moderate-on coastal bluff
Calicium adspersum spiral-spored guilded-head pin lichen	2B.2		Lower montane coniferous forest, North Coast coniferous forest	Unlikely-occurs in more inland/higher elevation habitat
Calystegia atriplicifolia ssp. buttensis Butte County morning-glory	4.2	May-Jul	Chaparral, Lower montane coniferous forest, Valley and foothill grassland- rocky, sometimes roadside	Unlikely-occurs in more inland/higher elevation habitat
Cardamine angulata seaside bittercress	2B.2	(Jan)Mar-Jul	Lower montane coniferous forest, North Coast coniferous forest	Unlikely-occurs in riparian habitat
Cardamine nuttallii var. gemmata yellow-tubered toothwort	3.3	Apr-May(Jun)	Lower montane coniferous forest, North Coast coniferous forest	Unlikely-occurs in more inland/higher elevation habitat

Scientific Name **Common Name**	**Listing Status**	**Blooming Period**	**Habitat**	**Potential to Occur in Project Area**
Downingia willamettensis Cascade downingia	2B.2	Jun-Jul(Sep)	Cismontane woodland (lake margins), Valley and foothill grassland (lake margins), Vernal pools	None-occurs in more inland/higher elevation habitat, lake margins, vernal pools
Empetrum nigrum black crowberry	2B.2	Apr-Jun	Coastal bluff scrub, Coastal prairie	Moderate-on coastal bluff
Epilobium rigidum Siskiyou Mountains willowherb	4.3	Jul-Aug	Lower montane coniferous forest (serpentinite)	None-occurs on serpentine
Erigeron cervinus Siskiyou daisy	4.3	Jun-Aug	Lower montane coniferous forest, Meadows and seeps	Unlikely-occurs in more inland/higher elevation habitat
Eriogonum nudum var. paralinum Del Norte buckwheat	2B.2	Jun-Sep	Coastal bluff scrub, Coastal prairie	Moderate-on coastal bluff
Eriogonum pendulum Waldo wild buckwheat	2B.2	Aug-Sep	Lower montane coniferous forest, Upper montane coniferous forest	Unlikely-occurs in more inland/higher elevation habitat
Eriogonum ternatum ternate buckwheat	4.3	Jun-Aug	Lower montane coniferous forest (serpentinite)	None-occurs on serpentine
Erysimum concinnum bluff wallflower	1B.2	Feb-Jul	Coastal bluff scrub, Coastal dunes, Coastal prairie	High-on coastal bluff
Erythronium hendersonii Henderson's fawn lily	2B.3	Apr-Jul	Lower montane coniferous forest	Unlikely-occurs in more inland/higher elevation habitat
Erythronium howellii Howell's fawn lily	1B.3	Apr-May	Lower montane coniferous forest, North Coast coniferous forest	Unlikely-occurs in more inland/higher elevation habitat
Erythronium oregonum giant fawn lily	2B.2	Mar-Jun(Jul)	Cismontane woodland, Meadows and seeps	Unlikely-occurs in more inland/higher elevation habitat
Eucephalus glabratus Siskiyou aster	4.3	Jun-Sep	Lower montane coniferous forest, Upper montane coniferous forest-Openings, Rocky	Unlikely-occurs in more inland/higher elevation habitat
Fissidens pauperculus minute pocket moss	1B.2		North Coast coniferous forest (damp coastal soil)	Moderate-maybe some potential on exposed soil
Gentiana setigera Mendocino gentian	1B.2	(Apr-Jul)Aug-Sep	Lower montane coniferous forest, Meadows and seeps	Unlikely-occurs in more inland/higher elevation habitat
Gilia capitata ssp. pacifica Pacific gilia	1B.2	Apr-Aug	Chaparral, Coastal bluff scrub, Coastal prairie, Valley and foothill grassland	Moderate-on coastal bluff
Gilia millefoliata dark-eyed gilia	1B.2	Apr-Jul	Coastal dunes	Moderate-on coastal bluff and strand
Glehnia littoralis ssp. leiocarpa American glehnia	4.2	May-Aug	Coastal dunes	Moderate-on coastal bluff and strand
Hesperevax sparsiflora var. brevifolia short-leaved evax	1B.2	Mar-Jun	Coastal bluff scrub, Coastal dunes, Coastal prairie	Moderate-on coastal bluff and strand
Horkelia sericata silky horkelia	4.3	Jun-Aug	Chaparral, Lower montane coniferous forest	Unlikely-occurs in more inland/higher elevation habitat
Hosackia gracilis harlequin lotus	4.2	Mar-Jul	Broadleafed upland forest, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Meadows and seeps,	Moderate-in disturbed areas

Scientific Name **Common Name**	**Listing Status**	**Blooming Period**	**Habitat**	**Potential to Occur in Project Area**
			North Coast coniferous forest, Valley and foothill grassland	
Iris bracteata Siskiyou iris	3.3	May-Jun	Broadleafed upland forest, Lower montane coniferous forest-serpentinite	Unlikely-occurs in more inland/higher elevation habitat
Iris innominata Del Norte County iris	4.3	May-Jun	Lower montane coniferous forest (serpentinite)	Unlikely-occurs in more inland/higher elevation habitat
Iris tenax ssp. klamathensis Orleans iris	4.3	Apr-May	Lower montane coniferous forest (often disturbed areas)	Unlikely-occurs in more inland/higher elevation habitat
Iris thompsonii Thompson's iris	4.3	(Mar-Apr)May-Jun(Jul-Aug)	Lower montane coniferous forest, North Coast coniferous forest- Edges (often), Mesic (usually), Openings, Roadsides (sometimes), Serpentinite (often), Streambanks (sometimes)	Unlikely-occurs in more inland/higher elevation habitat
Kopsiopsis hookeri small groundcone	2B.3	Apr-Aug	North Coast coniferous forest	Unlikely-occurs in more inland/higher elevation habitat
Lasthenia californica ssp. macrantha perennial goldfields	1B.2	Jan-Nov	Coastal bluff scrub, Coastal dunes, Coastal scrub	High-on coastal bluff
Lathyrus delnorticus Del Norte pea	4.3	Jun-Jul	Lower montane coniferous forest, North Coast coniferous forest	Unlikely-occurs in more inland/higher elevation habitat
Lathyrus japonicus seaside pea	2B.1	May-Aug	Coastal dunes	High-on strand
Lathyrus palustris marsh pea	2B.2	Mar-Aug	Bogs and fens, Coastal prairie, Coastal scrub, Lower montane coniferous forest, Marshes and swamps, North Coast coniferous forest	Unlikely-occurs in wetlands
Lewisia oppositifolia opposite-leaved lewisia	2B.2	Apr-May(Jun)	Lower montane coniferous forest (mesic)	Unlikely-occurs in more inland/higher elevation habitat
Lilium bolanderi Bolander's lily	4.2	Jun-Jul	Chaparral, Lower montane coniferous forest-serpentinite	None-occurs on serpentine
Lilium occidentale western lily	1B.1, CE,FE	Jun-Jul	Bogs and fens, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps (freshwater), North Coast coniferous forest (openings)	Unlikely-occurs in wetlands, prairie, and coastal forest
Lilium pardalinum ssp. vollmeri Vollmer's lily	4.3	(Jun)Jul-Aug	Bogs and fens, Meadows and seeps (mesic)	Unlikely-occurs in more inland/higher elevation habitat
Listera cordata heart-leaved twayblade	4.2	Feb-Jul	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest	Unlikely-occurs in more inland/higher elevation habitat
Lomatium howellii Howell's lomatium	4.3	Apr-Jul	Chaparral, Lower montane coniferous forest-serpentinite	Unlikely-occurs in more inland/higher elevation habitat
Lomatium tracyi Tracy's lomatium	4.3	May-Jun	Lower montane coniferous forest, Upper montane coniferous forest-serpentinite	Unlikely-occurs in more inland/higher elevation habitat
Lycopodium clavatum running-pine	4.1	Jun-Aug(Sep)	Lower montane coniferous forest, Marshes and swamps, North Coast coniferous forest	Unlikely-typically redwood forest

Scientific Name **Common Name**	**Listing Status**	**Blooming Period**	**Habitat**	**Potential to Occur in Project Area**
Lysimachia europaea arctic starflower	2B.2	Jun-Jul	Bogs and fens, Meadows and seeps	Unlikely. Occurs in wetlands.
Micranthes marshallii Marshall's saxifrage	4.3	Mar-Aug	Riparian forest	Unlikely-occurs in riparian habitat.
Mitellastra caulescens leafy-stemmed mitrewort	4.2	(Mar)Apr-Oct	Broadleafed upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	Unlikely-occurs in riparian habitat
Moneses uniflora woodnymph	2B.2	May-Aug	Broadleafed upland forest, North Coast coniferous forest	Unlikely-occurs in more inland/higher elevation habitat
Monotropa uniflora ghost-pipe	2B.2	Jun-Aug(Sep)	Broadleafed upland forest, North Coast coniferous forest	Unlikely-occurs in more inland/higher elevation habitat
Montia howellii Howell's montia	2B.2	(Feb)Mar-May	Meadows and seeps, North Coast coniferous forest, Vernal pools	Unlikely-maybe some potential in open disturbed areas
Oenothera wolfii Wolf's evening-primrose	1B.1	May-Oct	Coastal bluff scrub, Coastal dunes, Coastal prairie, Lower montane coniferous forest	High-on coastal bluff
Oxalis suksdorfii Suksdorf's wood-sorrel	4.3	May-Aug	Broadleafed upland forest, North Coast coniferous forest	Unlikely-occurs in more inland/higher elevation habitat
Packera bolanderi var. bolanderi seacoast ragwort	2B.2	(Jan-Apr)May-Jul(Aug)	Coastal scrub, North Coast coniferous forest-sometimes roadsides	Moderate-on coastal bluff
Packera macounii Siskiyou Mountains ragwort	4.3	Jun-Jul	Chaparral, Lower montane coniferous forest-sometimes serpentinite, often in disturbed areas	Unlikely-occurs in more inland/higher elevation habitat
Perideridia gairdneri ssp. gairdneri Gairdner's yampah	4.2	Jun-Oct	Broadleafed upland forest, Chaparral, Coastal prairie, Valley and foothill grassland, Vernal pools	Unlikely-occurs in more inland/higher elevation habitat
Phacelia argentea sand dune phacelia	1B.1	Jun-Aug	Coastal dunes	Moderate-on coastal bluff and strand
Pinguicula macroceras horned butterwort	2B.2	Apr-Jun	Bogs and fens (serpentinite)	None-occurs on serpentinite
Piperia candida white-flowered rein orchid	1B.2	(Mar)May-Sep	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	Unlikely-occurs in more inland/higher elevation habitat
Pityopus californicus California pinefoot	4.2	(Mar-Apr)May-Aug	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Unlikely-occurs in more inland/higher elevation habitat
Pleuropogon refractus nodding semaphore grass	4.2	(Mar)Apr-Aug	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Riparian forest	Unlikely-occurs in riparian habitat
Poa piperi Piper's blue grass	4.3	Apr-May	Chaparral, Lower montane coniferous forest-serpentinite, rocky	None-occurs on serpentine
Polemonium carneum Oregon polemonium	2B.2	Apr-Sep	Coastal prairie, Coastal scrub, Lower montane coniferous forest	Moderate-on coastal bluff and strand
Potamogeton foliosus ssp. fibrillosus	2B.3	Unk	Marshes and swamps	None-occurs in ponds and similar habitat

Scientific Name **Common Name**	**Listing Status**	**Blooming Period**	**Habitat**	**Potential to Occur in Project Area**
fibrous pondweed				
Primula pauciflora beautiful shootingstar	4.2	Apr-Jun	Great Basin scrub, Meadows and seeps, Pinyon and juniper woodland-mesic	Unlikely-occurs in more inland/higher elevation habitat
Pyrrocoma racemosa var. congesta Del Norte pyrrocoma	2B.3	Aug-Sep	Chaparral, Lower montane coniferous forest-serpentinite	None-occurs on serpentine
Ramalina thrausta angel's hair lichen	2B.1		North Coast coniferous forest-one dead twigs and other lichens	Moderate- on tree branches
Ribes laxiflorum trailing black currant	4.3	Mar-Jul(Aug)	North Coast coniferous forest-sometimes roadsides	Unlikely-typically in redwood forest
Romanzoffia tracyi Tracy's romanzoffia	2B.3	Mar-May	Coastal bluff scrub, Coastal scrub-rocky	High-on coastal bluff
Sabulina howellii Howell's sandwort	1B.3	Apr-Jul	Chaparral, Lower montane coniferous forest-serpentinite, xeric	None-occurs on serpentine
Sagittaria sanfordii Sanford's arrowhead	1B.2	May-Oct(Nov)	Marshes and swamps (shallow freshwater)	Unlikely-occurs in wetlands
Salix delnortensis Del Norte willow	4.3	Apr-May	Riparian forest (serpentinite)	None. Occurs on serpentine.
Sanguisorba officinalis great burnet	2B.2	Jul-Oct	Bogs and fens, Broadleafed upland forest, Marshes and swamps, Meadows and seeps, North Coast coniferous forest, Riparian forest-often serpentinite	Unlikely-occurs in wetlands
Sanicula peckiana Peck's sanicle	4.3	Mar-Jun	Chaparral, Lower montane coniferous forest- often serpentinite	None-occurs on serpentine
Sidalcea elegans Del Norte checkerbloom	3.3	May-Jul	Chaparral, Lower montane coniferous forest-serpentinite	None-occurs on serpentine
Sidalcea malachroides maple-leaved checkerbloom	4.2	(Mar)Apr-Aug	Broadleafed upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland	Moderate-on coastal bluff
Sidalcea malviflora ssp. patula Siskiyou checkerbloom	1B.2	May-Aug	Coastal bluff scrub, Coastal prairie, North Coast coniferous forest	High-on coastal bluff and disturbed areas, along 101
Sidalcea oregana ssp. eximia coast checkerbloom	1B.2	Jun-Aug	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	High-on coastal bluff and disturbed areas, along 101
Silene serpentinicola serpentine catchfly	1B.2	May-Jul	Chaparral, Lower montane coniferous forest- serpentinite openings; gravelly or rocky	None-occurs on serpentine
Streptanthus howellii Howell's jewelflower	1B.2	Jul-Aug	Lower montane coniferous forest (rocky, serpentinite)	None-occurs on serpentine
Tauschia glauca glaucous tauschia	4.3	Apr-Jun	Lower montane coniferous forest (gravelly, serpentinite)	None-occurs on serpentine
Tiarella trifoliata var. trifoliata trifoliate laceflower	3.2	(May)Jun-Aug	Lower montane coniferous forest, North Coast coniferous forest- edges, moist shady banks, streambanks	None-occurs on serpentine
Usnea longissima Methuselah's beard lichen	4.2		Broadleafed upland forest, North Coast coniferous forest-	Moderate-potential on tree branches

Scientific Name Common Name	Listing Status	Blooming Period	Habitat	Potential to Occur in Project Area
			On tree branches; usually on old growth hardwoods and conifers	
Vaccinium scoparium little-leaved huckleberry	2B.2	Jun-Aug	Subalpine coniferous forest rocky)	None-occurs in more inland/higher elevation habitat
Vancouveria chrysantha Siskiyou inside-out-flower	4.3	Jun	Chaparral, Lower montane voniferous forest-serpentinite	None-occurs on serpentine
Veratrum insolitum Siskiyou false-hellebore	4.3	Jun-Aug	Chaparral, Lower montane coniferous forest-clay	Unlikely-occurs in more inland/higher elevation habitat
Viola langsdorffii Langsdorf's violet	2B.1	May-Jul	Bogs and fens	Unlikely-occurs in wetlands
Viola palustris alpine marsh violet	2B.2	Mar-Aug	Bogs and fens, Coastal scrub	Unlikely-occurs in wetlands
Viola primulifolia ssp. occidentalis western white bog violet	1B.2	Apr-Sep	Bogs and fens (serpentinite), Marshes and swamps	None-occurs on serpentine

SPECIAL STATUS PLANT LISTING STATUS

Endangered Species Act (ESA)
FE: Federally Endangered
FT: Federally Threated
FR: Federally Rare

California Endangered Species Act (CESA)
CE: California Endangered
CT: California Threated
CR: California Rare

California Rare Plant Ranks
1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
2A: Plants Presumed Extirpated in California, But Common Elsewhere
2B: California Rare Plant Rank 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3. Review List: Plants about which more information is needed.
4. Watch List: Plants of limited distribution

Threat Ranks
0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3-Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

While the CNDDB is a useful tool for determining the habitat and general distribution of special status plants on the landscape, it cannot be used to determine a species is absent from a given area. The following CRPR 1 and 2 taxa have CNDDB records within a few miles of the project area:

Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*) CRPR 1B.2

The parcel is within a non-specific polygon mapped along Highway 101 from south of Ocean View Drive to Pelican Vista (Occurrence 6) (CDFW 2021b). The plants were observed in 1990 growing in fields and ditches along the highway approximately 0.5 miles south of the Oregon border (CDFW 2021c). Siskiyou checkerbloom is also recorded along Highway 101 approximately 1.3 south of the parcel. Siskiyou checkerbloom has potential to occur on the coastal bluff and in disturbed areas adjacent to the parking lot.

Oregon polemonium (*Polemonium carneum*) CRPR 2B.2
The parcel is within a non-specific polygon mapped based on a 1935 collection (CDFW 2021b). The plants were approximately 0.5 miles south of the border on the east side of the highway in moist brushy habitat (CDFW 2021c). Oregon polemonium has potential to occur on the coastal bluff.

Seaside pea (*Lathyrus japonicus*) CRPR 2B.1
Seaside pea is mapped approximately 0.2 miles north of the parcel on Pelican Beach State Park (CDFW 2021b). The plants were observed on the strand with other dune species (CDFW 2021c). Seaside pea has potential to occur on the strand and base of the coastal bluff.

Sand dune phacelia (*Phacelia argentea*) CRPR 1B.1
Sand dune phacelia is mapped approximately 0.4 miles north of the parcel (CDFW 2021b). The plants were observed on the beach with other dune species near the California/Oregon border (CDFW 2021c). Sand dune phacelia has potential to occur on the bluff and strand on the parcel.

Short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*) CRPR 1B.2
Short-leaved evax is mapped approximately 2.6 miles south of the parcel (CDFW 2021b). The plants occur on a coastal bluff (CDFW 2021c). Short-leaved evax has potential to occur on the coastal bluff on the parcel.

Dark-eyed gilia (*Gilia millefoliata*) CRPR 1B.2
Dark-eyed gilia is mapped approximately 2.6 miles south of the parcel (CDFW 2021b). The plants occur on a coastal bluff (CDFW 2021c). Dark-eyed gilia has potential to occur on the strand and coastal bluff on the parcel.

Wolf's evening-primrose (*Oenothera wolfii*) CRPR 1B.1
Wolf's evening-primrose is mapped approximately 2.6 miles south of the parcel (CDFW 2021b). The plants occur on coastal bluffs, coastal dunes, a mowed area, and gravel driveway (CDFW 2021c). Wolf's evening-primrose has potential to occur on the coastal bluff and in disturbed areas adjacent to the parking lot.
Bluff wallflower (*Erysimum concinnum*) CRPR 1B.2
Bluff wallflower has a record on Prince Island, approximately 2.8 miles southwest of the parcel. CDFW 2021b). Bluff wallflower has potential to occur on the coastal bluff.

Oregon coast paintbrush (*Castilleja litoralis*) CRPR 2B.2
Oregon coast paintbrush has a record on Prince Island, approximately 2.8 miles southwest of the parcel (CDFW 2021b). Oregon coast paintbrush has high potential to occur on the coastal bluff.

Ghost pipe (*Monotropa uniflora*) CRPR 2B.2
There is an occurrence of ghost pipe mapped approximately 1 mile east of the parcel (CDFW 2021b). The plants occur in forest dominated by Douglas-fir. There is no habitat for ghost pipe on the parcel.

A list of special status natural communities along the northern California coast was compiled from the *A Manual of California Vegetation Online Edition* (CNPS 2021b) (Appendix C).

4.2. Site Visit

The site visit was conducted by Kyle Wear, M.A. on October 9, 2021. Mr. Wear has over 25 years of experience conducting botanical surveys and other biological work in northern California.

5. RESULTS AND DISCUSSION

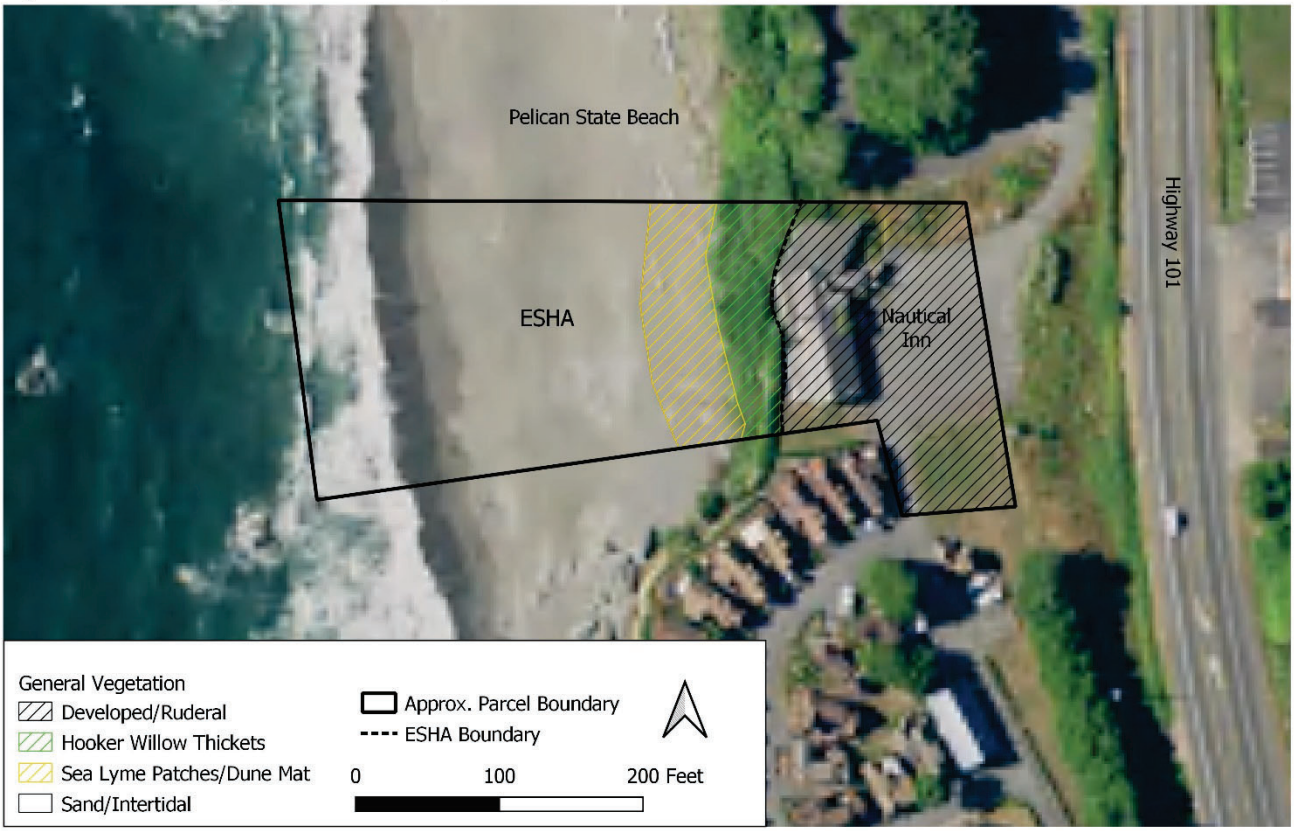
5.1. Special Status Plants

As described in Table 2 and Section 4.1, the parcel includes habitat for special status plants that occur on coastal bluffs, coastal dunes, and similar habitat, many of which have CNDDB records within a few miles of the parcel. If present, these taxa would likely occur on the coastal bluff or strand in the western portion of the project area. There is also some potential for coastal species that can occur in disturbed habitat, such as Siskiyou checkerbloom and Wolf's evening primrose, adjacent to the existing parking lot and in the area just east of the parcel along Highway 101.

5.2. Special Status Plant Communities

Three special status natural communities occur on the coastal bluff and upper strand (Figure 2). The coastal bluff includes Coastal dune willow thickets (*Salix hookeriana* Shrubland Alliance), G4 S3. Although no evidence of hydric soil or wetland hydrology were observed, these willow stands also meet a one-parameter CCA wetland definition. The upper strand below the bluff includes Sea lyme grass patches (*Leymus mollis* [*Elymus mollis* ssp. *mollis*] Herbaceous Alliance), G4 S2, and Dune mat (*Abronia latifolia-Ambrosia chamissonis* Herbaceous Alliance), G3 S3. Coastal bluffs, strand, and intertidal areas are also ESHA under the CCA and Del Norte County LCP.

Figure 2. General Vegetation and ESHA Map.



6. IMPACT ASSESSMENT

The proposed project is entirely within the existing developed or ruderal footprint of the inn and is outside of the ESHA and does not include stairs or other beach access improvements. There will be minimal impacts to vegetation and low risk of impacts to sensitive botanical resources.

7. REFERENCES

California Department of Fish and Wildlife (CDFW). 2021a. *California Natural Diversity Database (CNDDB) Quick Viewer.* v5.94.01. https://apps.wildlife.ca.gov/bios/?tool=cnddbQuick

CDFW. 2021b. *CNDDB.* Commercial Version [ds85]. https://apps.wildlife.ca.gov/bios/

CDFW. 2021c. *Rare Find*. v5.2.14. https://apps.wildlife.ca.gov/rarefind/view/RareFind.aspx

CDFW. 2018. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities.* https://www.wildlife.ca.gov/Conservation/Survey-Protocols#377281280-plants

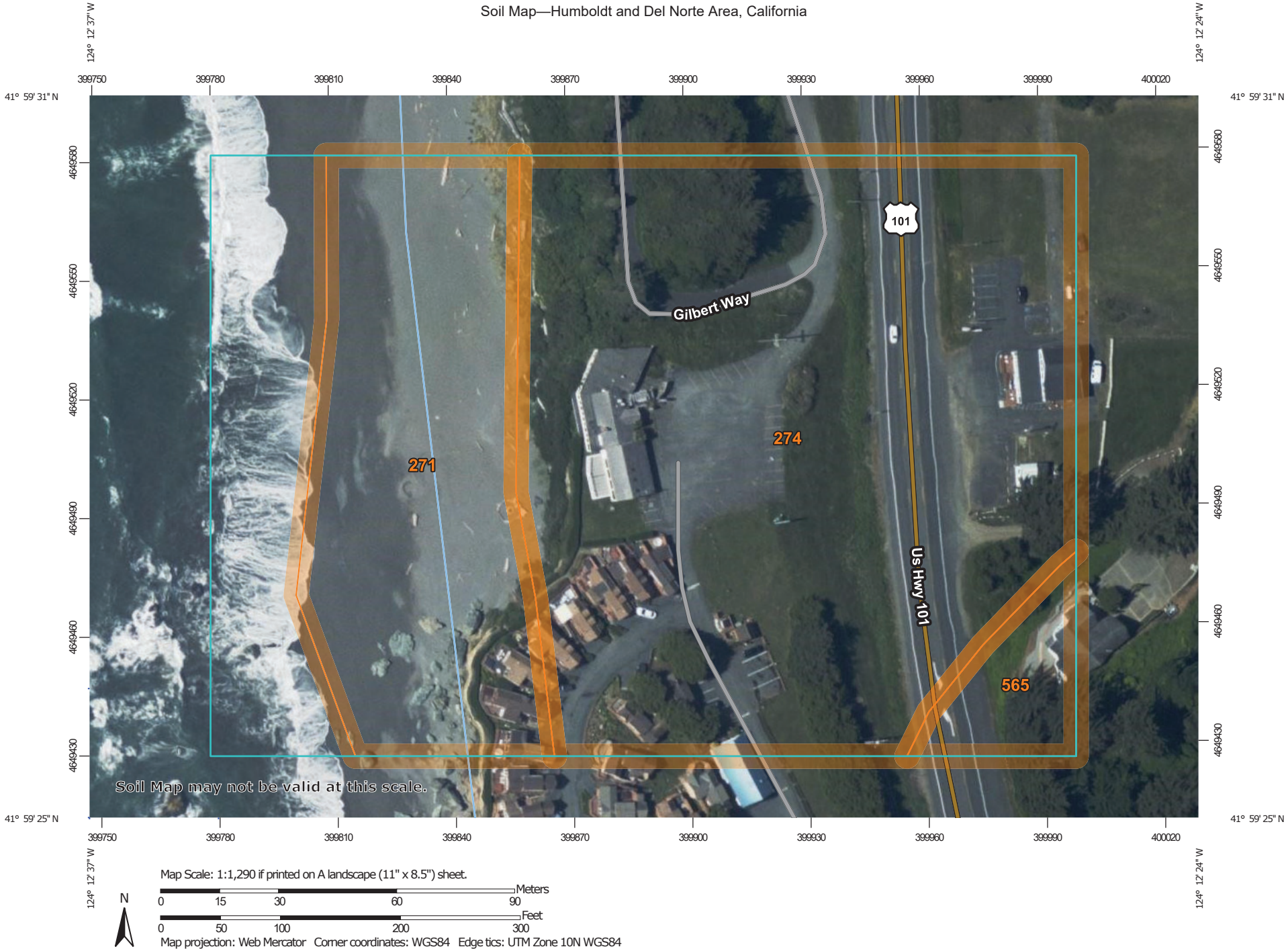
California Native Plant Society (CNPS). 2021a. *Inventory of Rare and Endangered Plants*. http://www.rareplants.cnps.org

CNPS. 2021b. A *Manual of California Vegetation Online Edition*. https://vegetation.cnps.org/

United States Department of Agriculture, Natural Resource Conservation Service (USDA, NRCS). 2021. *Web Soil Survey.* https://websoilsurvey.sc.egov.usda.gov

APPENDIX A. Site Plan

APPENDIX B. NRCS Soil Map



Map Scale: 1:1,290 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humboldt and Del Norte Area, California
Survey Area Data: Version 15, Sep 6, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 2, 2019—Jun 21, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
271	Oxyaquic Udipsamments, 0 to 20 percent slopes	2.0	23.9%
274	Winchuck silt loam,3 to 15 percent slopes	4.9	59.8%
565	Loeb-Macklyn complex, 0 to 15 percent slopes, high precip	0.3	3.8%
Totals for Area of Interest		**8.3**	**100.0%**

APPENDIX C. Special Status Natural Community Scoping List

Scientific name	Common name	Global rarity	State rarity
Abies grandis	Grand fir forest	G4	S2.1
Abronia latifolia - Ambrosia chamissonis	Dune mat	G3	S3
Acer macrophyllum	Bigleaf maple forest and woodland	G4	S3
Acer negundo	Box-elder forest and woodland	G5	S2.2
Aesculus californica	California buckeye groves	G3	S3
Alnus viridis	Sitka alder thickets	G5	S3?
Alopecurus geniculatus	Water foxtail meadows	G3?	S3?
Arbutus menziesii	Madrone forest	G4	S3.2
Arctostaphylos bakeri	Stands of Baker manzanita	G1	S1.2
Arctostaphylos (canescens, manzanita, stanfordiana)	Hoary, common, and Stanford manzanita chaparral	G3	S3
Arctostaphylos montana	Mount Tamalpais manzanita chaparral	G2	S2
Arctostaphylos (nummularia, sensitiva)	Glossy leaf manzanita chaparral	G2	S2
Argentina egedii	Pacific silverweed marshes	G4	S2
Bolboschoenus maritimus	Salt marsh bulrush marshes	G4	S3
Bromus carinatus - Elymus glaucus	California brome - blue wildrye prairie	G3	S3
Calamagrostis nutkaensis	Pacific reed grass meadows	G4	S2
Calocedrus decurrens	Incense cedar forest and woodland	G4	S3.2
Carex barbarae	White-root beds	G2?	S2?
Carex densa	Dense sedge marshes	G2?	S2?
Carex nudata	Torrent sedge patches	G3	S3
Carex obnupta	Slough sedge swards	G4	S3
Carex (pansa, praegracilis)	Sand dune sedge swaths	G4?	S3?
Carex serratodens	Twotooth sedge seeps	G3	S3?
Ceanothus (oliganthus, tomentosus)	Hairy leaf - woolly leaf ceanothus chaparral	G3	S3
Chamaecyparis lawsoniana	Port Orford cedar forest and woodland	G3	S3.1
Chrysolepis chrysophylla	Golden chinquapin thickets	G2	S2
Corylus cornuta var. californica	Hazelnut scrub	G3	S2?
Darlingtonia californica	California pitcher plant fens	G4?	S3
Deschampsia cespitosa - Hordeum brachyantherum - Danthonia californica	Coastal tufted hair grass - Meadow barley - California oatgrass wet meadow	GNR	S3
Equisetum (arvense, variegatum, hyemale)	Field horsetail - scouringrush horsetail - variegated scouringrush wet meadow	GNR	S3
Eriophyllum staechadifolium - Erigeron glaucus - Eriogonum latifolium	Seaside woolly-sunflower - seaside daisy - buckwheat patches	G3	S3
Festuca idahoensis - Danthonia californica	Idaho fescue - California oatgrass grassland	GNR	S3
Frangula californica - Rhododendron occidentale - Salix breweri	California coffee berry - western azalea scrub - Brewer's willow	G3	S3
Frankenia salina	Alkali heath marsh	G4	S3
Fraxinus latifolia	Oregon ash groves	G4	S3.2
Garrya elliptica	Coastal silk tassel scrub	G3?	S3?
Glyceria Ã—occidentalis	Northwest manna grass marshes	G3?	S3?

Scientific name	Common name	Global rarity	State rarity
Grindelia (camporum, stricta)	Gum plant patches	G2	S2
Hesperocyparis macnabiana	McNab cypress woodland and forest	G3	S3.2
Hesperocyparis pigmaea	Mendocino pygmy cypress woodland	G1	S1
Hesperocyparis sargentii	Sargent cypress woodland	G3	S3.2
Heterotheca (oregona, sessiliflora)	Goldenaster patches	G3	S3
Hydrocotyle (ranunculoides, umbellata)	Mats of floating pennywort	G4	S3?
Isoetes (bolanderi, echinospora, howellii, nuttallii, occidentalis)	Quillwort beds	G3	S3?
Juglans hindsii and Hybrids	Hindsâ€™s walnut and related stands	G1	S1.1
Juncus lescurii	Salt rush swales	G3	S2?
Juncus (oxymeris, xiphioides)	Iris-leaf rush seeps	G2?	S2?
Leymus cinereus - Leymus triticoides	Ashy ryegrass - creeping ryegrass turfs	G3	S3
Leymus mollis	Sea lyme grass patches	G4	S2
Lupinus chamissonis - Ericameria ericoides	Silver dune lupine - mock heather scrub	G3	S3
Morella californica	Wax myrtle scrub	G3	S3
Nassella spp. - Melica spp.	Needle grass - Melic grass grassland	G3	S3
Notholithocarpus densiflorus	Tanoak forest	G4	S3.2
Nuphar lutea	Yellow pond-lily mats	G5	S3?
Oenanthe sarmentosa	Water-parsley marsh	G4	S2?
Picea sitchensis	Sitka spruce forest and woodland	G5	S2
Pinus contorta ssp. contorta	Beach pine forest and woodland	G5	S3
Pinus muricata - Pinus radiata	Bishop pine - Monterey pine forest and woodland	G3	S3.2
Populus fremontii - Fraxinus velutina - Salix gooddingii	Fremont cottonwood forest and woodland	G4	S3.2
Populus trichocarpa	Black cottonwood forest and woodland	G5	S3
Pseudotsuga menziesii - Notholithocarpus densiflorus	Douglas fir - tanoak forest and woodland	G3	S3
Quercus garryana (tree)	Oregon white oak woodland and forest	G4	S3
Quercus lobata	Valley oak woodland and forest	G3	S3
Quercus parvula var. shrevei	Shreve oak forests	G2	S2
Quercus wislizeni - Quercus chrysolepis (shrub)	Canyon live oak - Interior live oak chaparral	G4	S3
Rhododendron columbianum	Western Labrador-tea thickets	G4	S2?
Rubus (parviflorus, spectabilis, ursinus)	Coastal brambles	G4	S3
Ruppia (cirrhosa, maritima)	Ditch-grass or widgeon-grass mats	G4?	S2
Salix gooddingii - Salix laevigata	Goodding's willow - red willow riparian woodland and forest	G4	S3
Salix hookeriana	Coastal dune willow thickets	G4	S3
Salix lucida ssp. lasiandra	Shining willow groves	G4	S3.2
Salix sitchensis	Sitka willow thickets	G4	S3?
Sarcocornia pacifica (Salicornia depressa)	Pickleweed mats	G4	S3

Scientific name	Common name	Global rarity	State rarity
Schoenoplectus (acutus, californicus)	Hardstem and California bulrush marshes	GNR	S3
Schoenoplectus americanus	American bulrush marsh	G5	S3.2
Scirpus microcarpus	Small-fruited bulrush marsh	G4	S2
Selaginella (bigelovii, wallacei)	Bushy spikemoss mats	G4	S3
Sequoia sempervirens	Redwood forest and woodland	G3	S3.2
Sparganium (angustifolium)	Mats of bur-reed leaves	G4	S3?
Spartina foliosa	California cordgrass marsh	G3	S3.2
Stuckenia (pectinata) - Potamogeton spp.	Pondweed mats	G3	S3?
Trifolium variegatum	White-tip clover swales	G3?	S3?
Tsuga heterophylla	Western hemlock forest	G5	S2
Umbellularia californica	California bay forest and woodland	G4	S3
Vaccinium uliginosum	Bog blueberry wet meadows	G4	S3
Vitis arizonica - Vitis girdiana	Wild grape shrubland	G3	S3
Zostera (marina, pacifica) Pacific Aquatic	Eelgrass beds	GNR	S3

Global (G) Rankings

G1 = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres.
G2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres.
G3 = 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres.
G4 = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.
G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world

State (S) Rankings

S1 = Less than 6 EOs OR less than 1,000 individuals OR less than 2,000 acres
- S1.1 = very threatened
- S1.2 = threatened
- S1.3 = no current threats known

S2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres
- S2.1 = very threatened
- S2.2 = threatened
- S2.3 = no current threats known

S3 = 21-80 EOs or 3,000-10,000 individuals OR 10,000-50,000 acres
- S3.1 = very threatened
- S3.2 = threatened
- S3.3 = no current threats known

S4 = Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat.
S5 = Demonstrably secure to ineradicable in California.

APPENDIX D. Photos of the Project Area



Photo 1. Existing inn to be removed.



Photo 2. Existing asphalt parking lot.



Photo 3. Vegetation between the parking lot and Highway 101 with Cotoneaster, Himalayan Blackberry, and pampas grass.



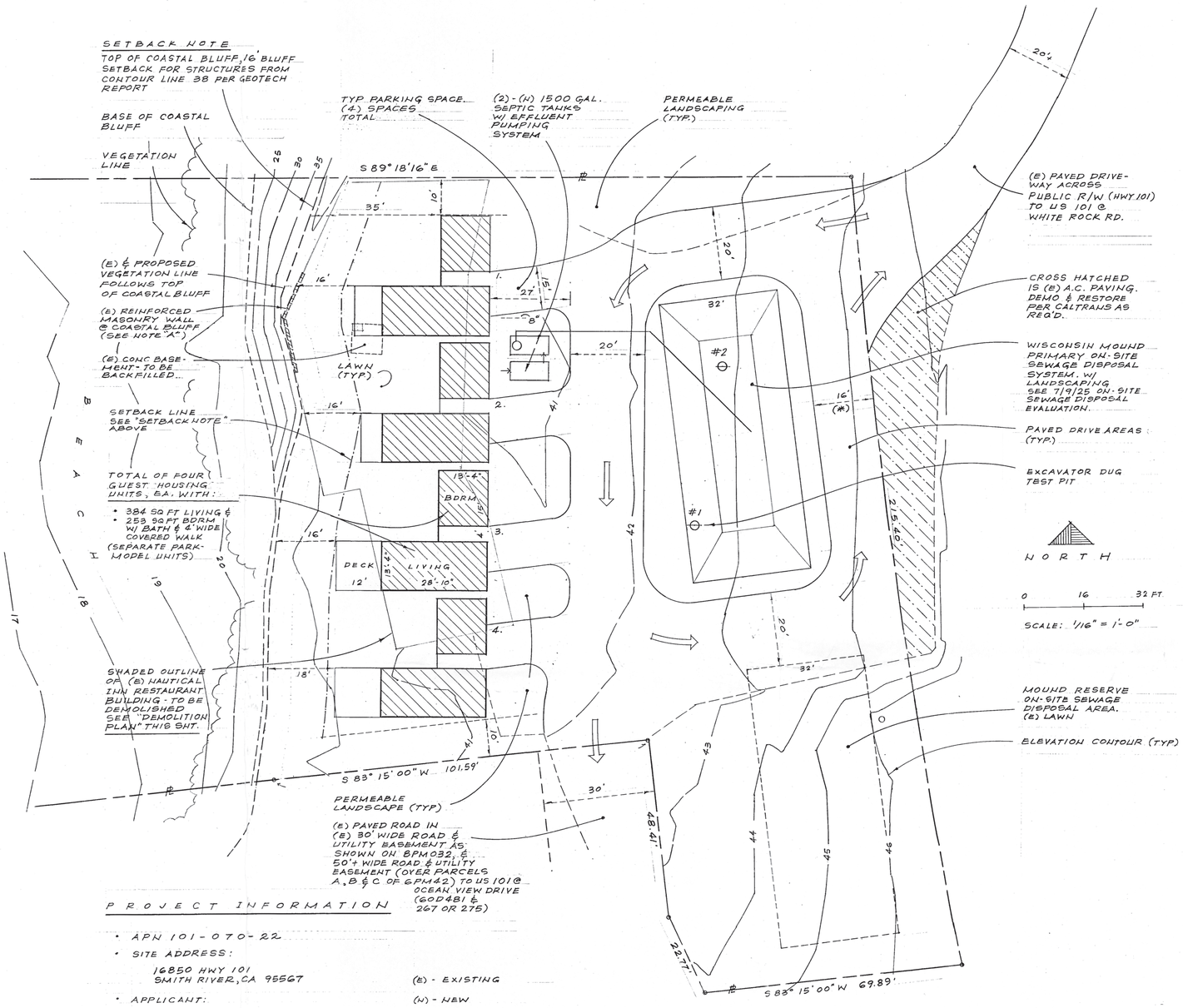
Photo 4. Escallonia hedge and maintained lawn along the top of the bluff behind the inn.



Photo 5. Hooker willow on bluff below the inn.



Photo 6. Stands sea lyme grass (American dune grass) and beach bur on the upper strand.



PROJECT INFORMATION

- APN 101-070-22
- SITE ADDRESS:

  16850 HWY 101
  SMITH RIVER, CA 95567

- APPLICANT:

  DANIEL H. DAHAN

- WATER SUPPLY:

  SMITH RIVER CSD

(E) - EXISTING

(N) - NEW

NO ACCESS ROADS WILL BE GATED.

DEMOLITION PLAN

The existing building and surrounding hardscape (concrete walks and pavement adjacent to the building) are to be removed. Verify limits of hardscape removal with the owner.

Perform all demolition work from the landward (easterly) side of the structures which are to demolished, and pull all demolished materials away from the coastal bluff using an excavator or by hand in such a manner that no damage occurs to, or adjacent to, the coastal bluff.

The existing reinforced masonry wall depicted on the Plot Plan defines the coastal bluff at the wall and shall remain intact and in-place. Additional existing foundation elements near the bluff face must also remain intact if their removal will compromise bluff stability or increase erosion of the bluff face. This will need to be field verified by the project engineer during demolition.

Stockpile excavated materials on the existing pavement and as far away from the coastal bluff as practical. Waste materials shall be stockpiled short term. Expedite removal of waste materials in a timely manner.

Best Management Practices shall be implemented during the demolition of the existing structure(s) including, but not necessarily limited to:

- wetting of bare soils in the work site as may be necessary to prevent and reduce fugutive dust.
- installation and maintenance of appropriate erosion and runoff control devices, including installation of a silt fence on the seaward side of the demolition area, east of the coastal bluff; and treatment of surfaces left bare by construction activities as necessary to prevent erosion or sedimentation of coastal resources.
- Limit working hours to normal business hours to prevent noise impacts on adjacent properties.

PLOT PLAN — NAUTICA BEACH RESORT

REVISIONS	BY

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REGISTERED PROFESSIONAL ENGINEER LEE A. THOMBLE 7/9/25 37325 EXPIRES 6/30/26 CIVIL STATE OF CALIFORNIA

JOB NO. 25031
DATE 7/1/25
SCALE AS SHOWN
SHEET 1

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FIGURES

Figure 1 Location & Geologic Map
Figure 2 Site Map

ATTACHMENT 1

ASFE Brochure

ATTACHMENT 2

Soil Profile Logs

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1.0 INTRODUCTION

This report presents the results of a Geotechnical Exploration performed by LACO Associates (LACO) to support construction of the proposed motel building on the subject site. Included in this report is an assessment of the potential geologic hazards associated with the proposed development and recommendations to mitigate the potential effects of such hazards.

2.0 SITE AND PROJECT DESCRIPTION

The subject 0.7 acre site (Assessor's Parcel Number 101-070-022) is located near the western edge of Section 32, Township 19 North, Range 1 West, Humboldt Baseline and Meridian, of the United States Geological Survey (USGS) Smith River 7.5-Minute Series Topographic Quadrangle (Figure 1). It is currently has a building located on the bluff edge and a parking lot to the east of the building the remainder of the site is covered with grass and low vegetation.

We understand the current plan is to redevelop the site with a new motel building and associated paved parking lot. Design details of the proposed motel were not available at the time of the preparation of this report. Based on discussions with the Gul Jaisinghani, the proposed two to three story, 20 unit motel building will likely be supported by a shallow footing with a slab on grade foundation system. Although building construction details are not yet known, a wood or metal-frame structure of light to moderate loading is typically associated with the proposed building type.

3.0 SCOPE OF SERVICES

In accordance with our agreement dated June 2, 2014, LACO's scope of services for this project was limited to:

1. Reviewing existing published geologic maps pertinent to the subject site and readily available unpublished soils and geologic reports.
2. Performing a field exploration program that includes:
    a. Geologic and geomorphic mapping of the proposed development area and vicinity.
    b. Subsurface exploration to characterize and sample soils within the development area.
    c. Collecting soil samples for possible laboratory analysis.
3. Conducting a laboratory testing program of selected soil samples to characterize relevant soil properties, as appropriate.
4. Preparing this 2013 California Building Code (CBC) compliant geotechnical report that documents existing subsurface conditions and provides foundation and earthwork recommendations for the proposed development.

Specifically excluded from our scope of services is a quantitative liquefaction analysis and an environmental assessment for the presence or absence of any hazardous, toxic, or corrosive materials. Although we have explored subsurface conditions as part of this investigation, we have not conducted any analytical laboratory testing of samples obtained for the presence of gasoline constituents, hazardous and/or corrosive materials.

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4.0 LIMITATIONS

This report has been prepared for the exclusive use of Gul Jaisinghani, his contractors and consultants, and appropriate public authorities for specific application to development of the subject site. LACO has endeavored to comply with the generally accepted geotechnical engineering standard of care common to the local area. LACO makes no other warranty, express or implied. A brochure prepared by Association of Firms Practicing in the Geosciences (ASFE) has been included as Attachment 1 of this report. We recommend that all individuals reading this Report also read this brochure.

The analyses and recommendations contained in this report are partially based on data obtained from subsurface exploration. The methods used indicate subsurface conditions only at specific locations where samples were obtained, only at the time of the exploration, and only to the depths penetrated. Samples cannot always be relied upon to accurately reflect stratigraphic variations that commonly exist between sampling locations, nor do they necessarily represent conditions at any other time. Results of any analysis of samples obtained during this project will be retained on file in our office. Unless directed otherwise by our Client, collected samples will be discarded 30 days following the issuance of this report.

The recommendations included in this report are based, in part, on assumptions about subsurface conditions that may only be observed and/or tested during subsequent project earthwork. Accordingly, the validity of these recommendations is contingent upon review of the subsurface conditions exposed during construction in order to check that they are consistent with those characterized in this report. Upon request, LACO can discuss the extent of (and fee for) observations and tests required to check the validity of the recommendations presented herein.

This report's conclusions or recommendations may not be valid if the nature, design, or location of the project is changed. If changes are contemplated, LACO should be consulted to review their impact on the applicability of the recommendations presented in this Report. Also, LACO cannot be responsible for any claims, damages, or liability associated with any other party's interpretation of the subsurface data presented herein, or the reuse of this report for other projects or at other locations without our express written authorization.

5.0 FIELD EXPLORATION AND LABORATORY TESTING

To assess in-situ soil conditions within the proposed development area, LACO reviewed the boring logs from previous subsurface explorations near the site (LACO 2011), and performed a field exploration program on June 26 and July 8, 2014. Our field exploration effort included drilling one boring utilizing a hollow stem auger to a maximum depth of 9 feet. The location of the boring (B1) is indicated on Figure 2. Due to the gravelly and cobbly nature of the subsurface below approximately five feet, the hollow stem auger could no longer penetrate the subsurface and drilling was terminated. Our geologist logged the soils and obtained soil samples of the materials encountered during the drilling. Soils were also logged from the bluff face; the soil profile location is marked on Figure 2. Soils were described in general accordance with the American Society for Testing and Materials (ASTM) Test Procedure D2488 Visual-Manual Procedures. The boring log and bluff soil profile are included in Attachment 2. Soil samples were delivered to our laboratory for possible analysis.

Due to the relatively fine granular nature of the upper five feet of soils encountered, laboratory testing was limited to particle size, a direct shear on the fine grained material and moisture-density analysis. The coarser

grained soils were tested for grain size. Laboratory test results are presented on the soil logs in Attachment 2.

On July 9, 2014, Advanced Geological Services performed a geophysical survey at the site. It consisted of two approximately 200-foot long seismic refraction lines generally oriented perpendicular to one another (Figure 2); the geophysical survey report is presented in Appendix 3. The geophysical survey was initiated to obtain subsurface data to estimate the depth and character of underlying soil strata and bedrock.

6.0 SITE AND SUBSURFACE CONDITIONS

6.1 Topography and Site Conditions

The site is situated on a flat low gradient ground surface (less than 5 percent). As mapped by United States Geologic Survey, the site is at an elevation of approximately 40 feet above mean sea level (msl). As noted previously, the site is currently occupied by a former restaurant and associated parking lot.

6.2 Geologic Setting

Based on a review of published geologic mapping (CDMG 1983), the soils beneath the site are unconsolidated Pleistocene alluvial deposits identified as the Battery Formation (Qby) (see Figure 3). The alluvium is primarily composed of marine terrace sand and dune deposits overlying imbricated gravels and sands.

6.3 Seismicity

The subject site is located within a seismically active region in which large earthquakes are expected to occur during the economic life span (50 years) of the development. North of the Mendocino triple junction, the regional tectonic framework is controlled by the Cascadia Subduction Zone (CSZ), wherein oceanic crust of the Juan de Fuca/Gorda plate is being actively subducted beneath the leading edge of the North American plate. The CSZ in its entirety extends from the Mendocino triple junction to British Columbia. Plate convergence along the Gorda segment of the CSZ is occurring at a rate of approximately 30 to 40 millimeters per year (mm/yr) (Heaton & Kanamori 1984). Rupture along the entire CSZ boundary may produce an earthquake with a maximum moment magnitude (Mw) of 9.0 or greater (Satake 2003).

The subject site is located in proximity to the late Quaternary-aged Big Lagoon Bald Mountain fault, which is a north-northwest trending thrust fault. Currently, the Big Lagoon Bald Mountain fault is not recognized by the State of California as being active within the past 11,000 years (CGS 2007). The CSZ and Trinidad fault are both recognized active faults located within a 55-mile radius from the subject site. The Trinidad fault is a northwest-striking, northeast dipping, low-angle thrust fault. The upper-bound earthquake considered likely to occur on the Trinidad fault has an estimated Mw of 7.3 (ICBO 1998).

Based on the record of historical earthquakes, faults within the plate boundary zone and internally-deforming Gorda Plate have produced numerous small-magnitude and several moderate to large (i.e., magnitude greater than 6) earthquakes affecting the local area. Several active regional seismic sources in

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addition to those described above are proximal to the subject site and have the potential to produce strong ground motions. These seismic sources include:

- The northern segment of the San Andreas transform fault that represents the boundary between the stable North American plate and the northwest-migrating Pacific plate;
- The Mendocino fault, an offshore, high-angle, east-west-trending, right-lateral strike-slip fault that forms the boundary between the Gorda and Pacific plates; and
- Faults within the internally-deforming Gorda plate consisting of high-angle, northeast-trending, left-lateral, strike-slip faults.

6.4 Soil Conditions

The shallow soils underlying the site consist of approximately 5 feet of native fine sandy silt. Underlying the surface soils are discontinuous and heterogeneous layers of dense silty sandy well-graded gravels to the maximum depth explored (~9 feet bgs). Logging the bluff face indicates that the gravels continue below the beach sands at the toe of the bluff.

6.5 Groundwater Conditions

A review of groundwater monitoring data from the environmental investigations near the site indicates groundwater fluctuates between approximately 8 to 10 feet bgs (LACO 2011). No seeps or emergent groundwater was observed from the bluff face during our investigation

7.0 GEOLOGIC HAZARDS

Potential geologic hazards assessed for the subject site include seismic ground shaking, surface fault rupture, liquefaction and related phenomena, settlement, flooding and high groundwater, tsunami inundation, and slope instability. These assessments are presented in the following paragraphs.

7.1 Seismic Ground Shaking

As noted in Section 4.3 of this report, the subject site is situated within a seismically active area proximal to multiple seismic sources capable of generating moderate to large ground motions. Consequently, there is high probability that the subject site will experience strong ground shaking during the economic life span of the proposed development. As prescribed by the 2013 CBC, the spectral response accelerations for seismic analysis and design of proposed structures are presented in Section 8.3 of this report.

7.2 Surface Fault Rupture

The subject site is not located within an Alquist-Priolo earthquake fault zone and, as such, does not require a trench-based fault rupture hazard evaluation. Based on the distance between the subject site and the closest active fault, the potential for surface fault rupture to occur within the subject site is low.

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7.3 Liquefaction

Liquefaction is a phenomenon in which loosely deposited granular soils generally less than 50 feet below ground surface, with silt and clay contents of less than approximately 35 percent and non-plastic silts located below the groundwater table undergo rapid loss of shear strength when subjected to strong earthquake-induced ground shaking. Ground shaking of sufficient duration results in the loss of grain-to-grain contact due to a rapid rise in pore water pressure, and causes the soil to behave as a fluid for a short period of time. Factors known to influence liquefaction potential include composition and thickness of soil layers, grain size distribution, relative density, and both intensity and duration of ground shaking.

As presented on Map S-2 of Special Publication 115 (CDMG 1995), the subject site is not in an area delineated as having a liquefaction hazard. A quantitative liquefaction analysis was not performed.

Lateral spreading, which is the lateral displacement of surficial soils, is usually associated with liquefaction of the underlying soils. Given that the liquefaction hazard at the subject site is considered to be low, the potential for liquefaction-induced lateral spreading is also considered to be low.

7.4 Settlement

Static settlement is the result of compressive deformation of soil beneath an applied load. The compressive deformation generally results from a reduction in voids within the soil. In dry or granular soils, the compression of the soil occurs relatively rapidly. Conversely, the compressive deformation in soft, saturated fine-grain soils often occurs very slowly.

The proposed development is anticipated to be relatively lightly- to moderately-loaded, and supported on native soils. As such, provided building foundations are designed per our recommendations, we estimate total foundation settlement will be less than 1 inch (Schmertman 1979), and to occur during the building construction. Differential settlement should be less than ¼ inch across a distance of approximately 20 feet.

7.5 Slope Instability/Landsliding

Slope instability and setbacks from the bluff face are addressed in a separate report (LACO 2014).

7.6 Flooding, Tsunami, and High Groundwater

7.6.1 Flooding

The Site is in Flood Insurance Rate Map, Del Norte County, California and Incorporated Areas, Panel 30, Map number 06015C0030F (100 year flood) area. Thus, the risk of future flooding (tsunami) with the potential to adversely affect the subject site is considered to be moderate to high.

7.6.2 Tsunami

Tsunami hazard maps published by the State of California (California Geological Survey 2009), indicates the subject site is within a predicted tsunami inundation zone and thus the risk of tsunami inundation at the

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subject site is considered moderate to high. Estimated inundation tsunami elevation is approximately 42 feet above mean sealevel.

7.6.3 Groundwater

As noted in Section 6.5 of this report, Emergent groundwater or evidence of groundwater seepage was not observed on the approximately 20 foot high bluff face during our site reconnaissance.

7.7 Expansion Potential

Some clay minerals undergo volume changes upon wetting or drying. Soils containing such minerals will shrink/swell with the removal/addition of water. The heaving pressures associated with swelling can damage structures and flatwork. The soils encountered during our field exploration consist primarily of granular soils. Thus, we judge the likelihood of expansive soils being present is low to negligible.

8.0 RECOMMENDATIONS

Based on the results of our field exploration, laboratory testing, engineering analysis, and literature review, we judge the subject site to be suitable for development of the proposed building, provided the recommendations presented in this report are incorporated into the project design and construction.

The main geologic/geotechnical engineering considerations affecting design and construction of the proposed development include: the potential for strong seismic shaking occurring at the Site, slope instability and tsunami inundation.

8.1 Foundations

The planned up to three-story building can be supported on shallow spread footings designed and constructed in accordance with the minimum standards of the 2013 CBC and the recommendations (including earthwork) contained herein.

The footings should bear on low organic content native stiff sandy silt beginning at approximately 1.5 bgs. For design, use a maximum allowable bearing pressure of 1,500 pounds per square foot (psf) for dead loads. Footings should be at least 12 inches wide and 12 inches deep.

Resistance to lateral forces may be computed using friction along or passive pressure against foundation elements. Friction between the undersurface of concrete footings and the supporting soil is available, as well as passive pressure acting against the sides of foundations. Use an allowable lateral bearing pressure of 250 pounds per cubic foot, and an allowable coefficient of friction of 0.25 between the footing bottoms and underlying soil. If friction and passive pressures are combined, the lesser value should be reduced by 50 percent.

Footing concrete should generally be placed neat against a firm soil surface that is relatively free of loose debris material. If backfill against formed footings is required, it should be a structural fill material that is placed and compacted as recommended in the earthwork section of this report.

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Where trenches closely parallel a footing and the trench bottom is within a 2:1 (horizontal:vertical) projection outward and downward from the footing, concrete slurry (2-sack minimum) should be utilized to backfill that portion of the trench below the plane. The use of slurry backfill is not required where a narrow trench crosses a footing at or near a right angle.

8.2 Moisture Control for Concrete Slab Foundations

Concrete slabs should be underlain by at least 4 inches of clean, 3/4-inch crushed rock to act as a capillary moisture break. To reduce the possibility of moisture migration through the concrete floor, a 15-mil plastic membrane (vapor retarder) should be placed on the crushed rock. To help protect the membrane against puncture during steel and concrete placement, and to aid in concrete curing, the membrane should be covered with 2 inches of clean sand.

LACO's recommendation for a concrete slab moisture vapor barrier is not intended to eliminate potential slab moisture problems, but rather to reduce the potential for moisture to permeate through the concrete. Flooring consultants and/or flooring manufactures should be consulted for slab design where slab finishes require stringent moisture control.

8.3 Seismic Design Parameters

Based on the conditions encountered in our recent geotechnical borings, we have classified the Site as Site Class D consisting of a "stiff soil profile" (Section 1613.5.2, 2013 CBC). The design spectral response accelerations Ss, S_1, Fa, Fv, S_{MS}, S_{M1}, S_{DS}, and S_{D1} were determined using the United States Geological Survey (USGS) seismic calculator software, "Seismic Hazard Curves, Response Parameter, Design Parameters: Seismic Hazard Curves and Uniform Hazard Response Spectra", (Last Modified: March 10, 2014), utilizing the American Society of Civil Engineers (ASCE) Standard 7-10, Minimum Design Loads for Buildings and Other Structures analysis option. Calculated values are presented in Table 2.

Table 2 - Summary of Seismic Design Factors

Site Class	F_a	F_v	S_s	S_1	S_{MS}	S_{M1}	S_{DS}	S_{D1}
D	1.0	1.5	1.392	0.680	1.392	1.020	0.928	0.680

**Latitude and longitude are 41.991223° North and -124.208454° West, for the central portion of the parcel from Google earth.*

These design spectral response accelerations are further defined as follows:

- F_a Short period coefficient to modify 0.2-second period of mapped spectral response accelerations for Site Class D.
- F_v Long period coefficient to modify 1.0-second period of mapped spectral response accelerations for Site Class D.
- S_s Mapped spectral response acceleration, 5 percent damped, at 0.2-second period for Site Class B (%g).
- S_1 Mapped spectral response acceleration, 5 percent damped, at 1.0-second period for Site Class B (%g).
- S_{MS} Maximum considered earthquake spectral response acceleration, 5 percent damped, at 0.2-second for Site Class effects (%g).

S_{M1} Maximum considered earthquake spectral response acceleration, 5 percent damped, at 1.0-second period for Site Class effects (%g).
S_{DS} Design spectral response acceleration, 5 percent damped, at 0.2-second period (%g).
S_{D1} Design spectral response acceleration, 5 percent damped, at 1.0-second period (%g).

8.4 Pavement

Pavement structural sections should be designed by a qualified design professional to withstand the anticipated traffic loads over the known supporting subgrade soil strength for the design life of the development. A flexible pavement system may be used for this site consisting of asphalt concrete (AC) placed over compacted Caltrans Class 2 Aggregate Base (AB), which in turn rests on a properly prepared subgrade.

8.4.1 Pavement Subgrade Preparation

The pavement subgrade should be prepared in accordance with the Site Preparation section of this report. The upper 6 inches of the subgrade should be scarified and recompacted to a minimum of 95 percent relative compaction per Caltrans Test Methods 216 and 231. Following compaction, the subgrade should be proof rolled with a loaded ten-wheel dump truck (or equivalent) under the supervision of the project geotechnical engineer (or a designated representative), to check that a firm and unyielding surface is provided. Yielding areas or areas that do not meet the required compaction standard may have to be over-excavated and replaced with engineered fill that is placed, compacted, and tested as recommended in this report.

9.0 EARTHWORK

The following sections of this report present general earthwork recommendations for the project, where needed. Recommendations for site and subgrade preparation fill and backfill quality and compaction, and surface drainage control are included.

9.1 Site Preparation

Areas to be graded should be cleared of debris and stripped of vegetation and undocumented fill and loose native soil to expose the firm native soils (at least 1.5 feet bgs). These activities should generally be conducted during dry-weather conditions, where feasible. If wet-weather site preparation is necessary, additional excavation may be needed where rain-softened, yielding soils occur.

9.2 Subgrade Preparation

Areas to receive fill should be cleared of any existing asphalt concrete pavement, concrete foundations, building rubble, sod, topsoil, and/or any other debris materials. The exposed ground surface should be excavated to slope at 10 percent or less, if needed. Vertical sides or steps may be necessary in some situations to achieve this recommended maximum slope. The exposed grade should then be prepared as follows:

1. Proof-roll the exposed grade under the supervision of the project Geotechnical Engineer or their representative in pavement areas only. Proof rolling should be conducted with a fully-loaded, ten-

yard dump truck with a minimum rear-axle load of 8 tons or equivalent. The soil surface should provide a firm and unyielding grade under the load of the dump truck. Unsuitable soils identified during proof rolling should either be removed and replaced or addressed through supplemental recommendations from the project Geotechnical Engineer.

2. Soft and/or undocumented fill soils should be removed for their full depth beneath planned foundation or floor slab areas. Depending on the finished grades of planned foundation and floor slab elements, the removed materials should be replaced with properly compacted structural fill.

9.3 Structural Fill

Structural fill materials used to support floor slabs, sidewalks, and pavements should be composed of low expansion potential material that is free of organic material, debris, and/or other deleterious matter. Structural fill material should be placed on a prepared grade as recommended in section 9.2 of this report. The material should not contain rocks larger than 3 inches in greatest dimension, or more than 15 percent of rocks larger than 2 inches. Additionally, the material should meet the following specifications:

Plasticity Index:	15% or less
Liquid Limit:	40% or less
Percent passing No. 200 sieve:	50 maximum, 5 minimum

9.4 Compaction Standard

Unless directed otherwise by the project Geotechnical Engineer or their representative, structural fill should be compacted to a minimum of 90 percent of the maximum dry density of the same soil as determined by the ASTM D1557 method. A LACO field technician should be present to observe fill placement operations and to perform field density tests (per ASTM D6938) at random locations throughout the fill to check that the specified relative compaction is being achieved by the Contractor. The structural fill should be placed in loose lifts less than approximately 8 inches thick on a prepared subgrade as specified above.

9.5 Cut and Fill Slopes

We understand the current development plans do not include permanent, un-retained cut or fill slopes. In the event that un-retained cut and/or fill slopes greater than 3 feet high are required, they should be constructed in accordance with the requirements of the Del Norte County Grading Ordinance and the current CBC.

9.6 Drainage

The subject site should generally be graded to provide positive drainage away from foundations and the bluff face. A minimum gradient of 2 percent should be maintained for hardscaped areas. A 5 percent gradient should be maintained for landscaped areas within 10 feet of a structure. The grading or landscaping design and construction should not allow water to pond, or migrate beneath any structure. Runoff from hardscaped areas, roofs, patios, and other impermeable surfaces should be contained, controlled, and collected in a tight-line pipe that outlets into the Site storm drainage system.

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10.0 CONSTRUCTION CONSIDERATIONS

Based on the subsurface conditions encountered at the site, required excavations will be made in residual soils. These materials should be easily dug with an excavator or backhoe.

Temporary excavations and construction slopes should be designed, planned, constructed, and maintained by the Contractor and should conform to applicable local, state, and federal regulations including the current Occupational Safety and Health Administration (OSHA) Excavation and Trench Safety Standards. To help minimize the risk of ground movement and/or settlement, construction equipment, building materials, excavated soil, vehicular traffic, and other similar loads should not be allowed near the top of any unshored excavation. Where the stability of adjoining buildings, walls, pavements, or other similar improvements may be endangered by excavation operations, and to protect personnel working in the excavation, support systems such as shoring, bracing, or underpinning may be required to provide structure and trench wall stability.

Excavation operations are dependent on construction methods and schedules and, as such, the Contractor shall be solely responsible for the design, installation, maintenance, and performance of all shoring, bracing, underpinning, and other similar excavation-related systems. Under no circumstances should anything written herein be inferred to mean that LACO assumes any responsibility for temporary excavations or the safety thereof. Nor does LACO assume any responsibility for the design, installation, maintenance, and performance of any shoring, bracing, underpinning, or other similar excavation-related systems.

11.0 ADDITIONAL GEOTECHNICAL SERVICES

We recommend LACO be retained to provide the following post-report and construction services:

- Review the foundation and grading plans to check for conformance with the recommendations presented herein.
- Monitor site grading and observe exposed grades prior to placement of structural fills and/or pavement sections.
- Observe foundation excavations prior to placement of any forms or reinforcing steel.
- Monitor the placement of structural fill, and test all structural fill to check that the recommended relative compaction is achieved.

These services will allow us to check that the work performed conforms to the recommendations contained within this report, and that the assumptions made in its preparation are valid.

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12.0 REFERENCES

American Society of Civil Engineers (ASCE) Standard 7-10

CBC (California Building Code), 2013 edition.

CDMG (California Division of Mines and Geology), 1983, Geology and Geomorphic Features Related to Landsliding, Smith River 7.5-Minute Quadrangle Official Map, Del Norte, California.

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National Flood Insurance Program, FIRM, Flood Insurance Rate Map, Del Norte County California and Incorporated Areas, Panel 30, Map number 06015C0030F, November 26, 2010.

Heaton, T. H., Kanamori, H., (1984), Seismic potential associated with subduction in the northwestern United States, Bulletin of the Seismological Society of America; June 1984; v. 74; no. 3; p. 933-941.

ICBO-CDMG (International Conference of Building Officials-California Division of Mines and Geology), 1998, Maps of Known Active Fault Near Source Zones in California and Adjacent Portions of Nevada

LACO 2011. Technical memorandum. Smith River Rancheria Sewer Extention Getoech,. January 2011.

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Satake, K., Wang, K., Atwater, B., (2003), Fault slip and seismic moment of the 1700 Cascadia earthquake inferred from Japanese tsunami descriptions. Journal of Geophysical Research. Vol. 108, No. B11, 2535.

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FIGURES

Figure 1 **Location/Geologic Map**

Figure 2 **Site Map**

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ATTACHMENT 1

ASFE Brochure

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ATTACHMENT 2

Soil Boring and Profile Logs

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TECHNICAL MEMORANDUM

Bluff Retreat and Erosion Reevaluation
Nautical Inn Site

Date:	September 10, 2021
Project No.:	8062.02
Prepared For:	Gul Jaisingani
Prepared By:	Gary L. Manhart Senior Engineering Geologist CEG No. 2651; Exp. 10/31/22
Reviewed By:	Christine S. Manhart Principal Geologist CHG No. 1080, Exp 3/31/21



Attachments:	Appendix 1:	ASFE brochure
	Appendix 2:	Soil Logs
	Appendix 3:	Seismic Reflection Survey
	Appendix 4:	Site Photographs
	Appendix 5	List of Aerial and Oblique Photographs

1.0 INTRODUCTION

1.1 Purpose

This report presents a reevaluation of the bluff stability and erosion potential of the coastal bluff that defines the western edge of the marine terrace at 16850 U.S. Highway 101, Smith River, California, (Figure 1) Assessor's Parcel Number (APN) 101-070-22 (Site) . The Site is within the Coastal Zone appeal jurisdiction (within the Del Norte County jurisdiction). The California Coastal Commission (CCC) has requested a reevaluation of LACO's, *Coastal Bluff Setback Recommendation Report* (2014a) findings. The revised development setback is based on the results of the 2014 site specific quantitative slope instability analysis with a reevaluation of the bluff retreat rate analysis using new and additional data completed in accordance with California Coastal Commission Memorandum W11.5 (Johnsson, 2003). Additionally, sea level rise was reevaluated based on new data and models.

Figure 1. Location Map



In accordance with Engineering Services Agreement between Mr. Gul Jaisinghani (Client) and LACO dated July 16, 2021, our work consisted of the following:

- Reevaluate existing Site data used previously for this project (LACO *Former Nautical Inn Geotechnical Report* (2014b) in addition to new published and unpublished resources.
- Site review and mapping of ocean bluff (within approximately 100 feet lateral to planned building) under direction of a LACO Certified Engineering Geologist.
- Prepare a scaled topographic cross section of the bluff west of the site using existing remote sensing Lidar data.
- Review the existing quantitative slope instability analysis and determine if new set back recommendations are warranted.
- Consider the potential effects of future sea level rise (SLR) on bluff erosion and retreat at the site. SLR evaluation will follow the 2018 CCC and State SLR Guidance.
- Conduct a time-series aerial-photographic analysis and review existing published data to better estimate historic bluff retreat rates.
- Establish a recommended setback from the existing edge of bluff based on the results of the stability analysis and a 75-year design life (per California Coastal Commission Memorandum W11.5 guidelines).

Deliverable will be an updated Bluff Erosion and Slope Setback Recommendation Report documenting the result of LACO's updated quantitative slope instability analysis if warranted and estimated bluff retreat rate. The report includes a minimum setback distance from the top of the existing bluff edge.

1.2 Limitations

This report has been prepared for the exclusive use of the Client, his design team, contractors and consultants, and appropriate public authorities for specific application to the proposed Site improvements.

LACO has exercised a standard of care equal to that generated for this industry to ensure the information contained in this report is current and accurate. The opinions presented in this report are based upon information obtained from subsurface excavations, a site reconnaissance, review of geologic maps and data available to us, and upon local experience and engineering judgment, and have been formulated in accordance with generally accepted geotechnical engineering practices that exist in California at the time this report was prepared. In addition, geotechnical issues may arise that are not apparent at this time. No other warranty, expressed or implied, is made or should be inferred. A brochure prepared by ASFE (Association of Firms Practicing in the Geosciences) has been included in Appendix 1 of this report. We recommend that all individuals reading this report also read this brochure.

Data generated for this report represent information gathered at that time and at the widely spaced locations indicated. Subsurface conditions may be highly variable and difficult to predict. As such, the recommendations included in this report are based, in part, on assumptions about subsurface conditions that may only be observed and/or tested during subsequent project earthwork. Accordingly, the validity of these recommendations is contingent upon review of the subsurface conditions exposed during construction in order to check that they are consistent with those characterized in this report. Upon request, LACO can discuss the extent of (and fee for) observations and tests required to check the validity of the recommendations presented herein.

The opinions presented in this report are valid as of the present date for the property evaluated. Changes in the condition of the property can occur over time, whether due to natural processes or the works of man, on this or adjacent properties. In addition, changes in applicable standards of practice can occur, whether from legislation or the broadening of knowledge. Accordingly, the opinions presented in this report may be invalidated, wholly or partially, by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years, nor should it be used, or is it applicable, for any property other than that evaluated. This report is valid solely for the purpose, site, and project described in this document. Any alteration, unauthorized distribution, or deviation from this description will invalidate this report. LACO assumes no responsibility for any third-party reliance on the data presented. Additionally, the data presented should not be utilized by any third-party to represent data for any other time or location.

2.0 PROJECT DESCRIPTION

2.1 Project Location

Pertinent Site location information is listed in Table 1.

Table 1. Project Location Information

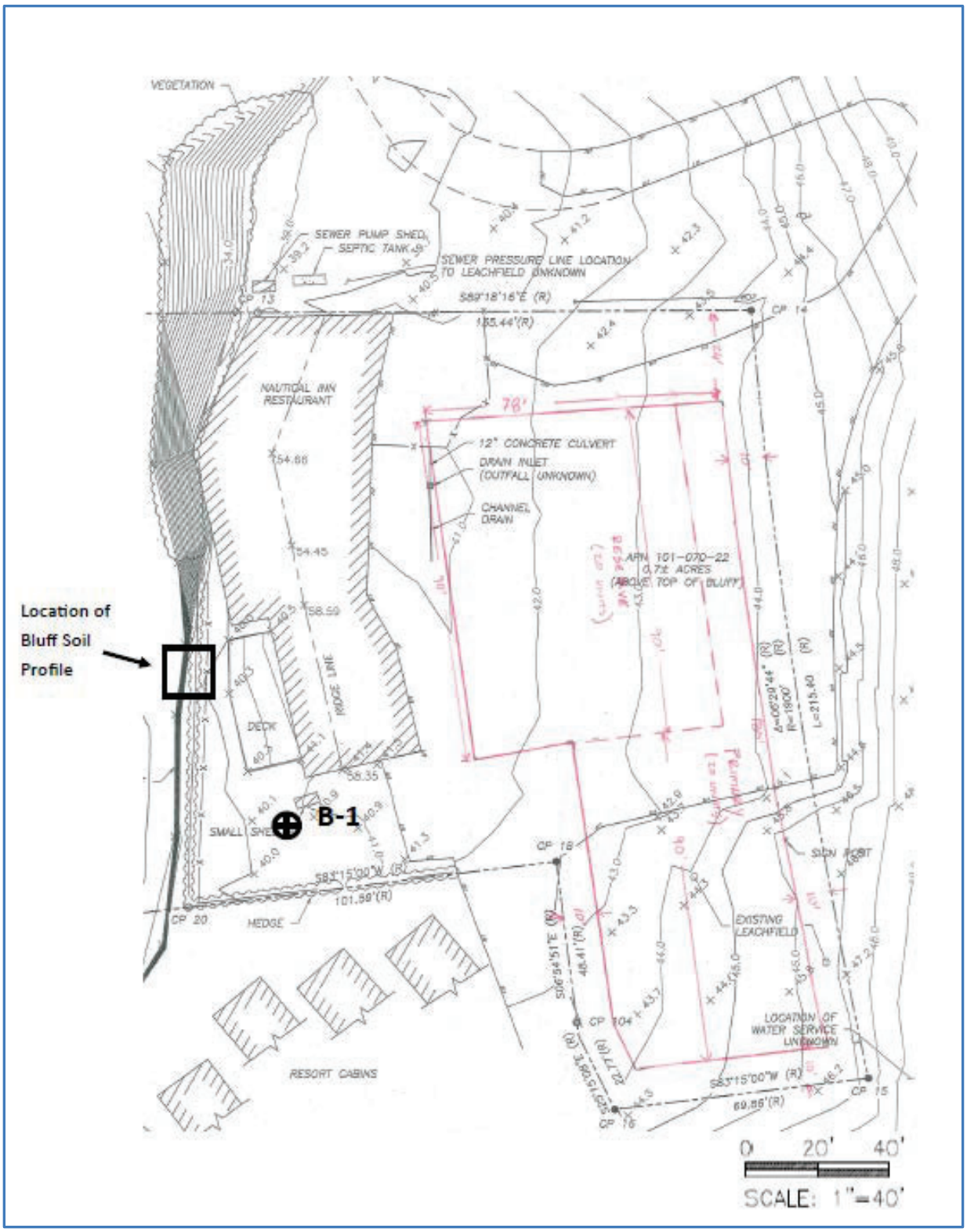
Latitude and Longitude*	41.991224°N and -124.208465°W
Legal Description	Assessor Parcel Number 101-070-022
Parcel Size	0.7± acres above the bluff face

United States Geologic Survey Quadrangle; Smith River 7.5-minute quadrangle
*Based on coordinates provided from Google Earth general parcel center

2.2 Proposed Development

The Site is currently developed with a former restaurant building sitting at the edge of the bluff on the western end of the Site (Figure 2). As we understand, the current development plan is to demolish the existing building and construct a small motel with a restaurant on the western side of the property. The exact building location has yet to be determined and will be based on the findings of this report. Community water services are available by the Smith River Community Services District; however, an on-site sewage disposal system will be required.

Figure 2. Site Map



Base map from LACO (2014a). Elevation of the base of the bluff is 21 feet mean sea level (msl).

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Geologic and Seismic Setting

The Site is situated on the edge of a relatively gently sloping marine terrace surface adjacent to the Pacific Ocean. The marine terrace surface elevation ranges from 35 feet at the top of the bluff to a maximum 50 feet mean sea level (msl). The western edge of the site is a near-vertical bluff along the southern property line and a steep slope at the north end. Published geologic maps indicate the area is underlain by Quaternary marine terrace and sand dune deposits consisting of unconsolidated sands, alternating with silty clays and imbricated gravels (CDMG, 1983).

No active fault traces are shown traversing the Site on published geologic maps reviewed. This Site is not located within an "Earthquake Fault Zone". The Site is located within a seismically active region in which large earthquakes are expected to occur during the economic life span (75 years) of the development. North of the Mendocino triple junction, the regional tectonic framework is controlled by the Cascadia subduction zone (CSZ), wherein oceanic crust of the Juan de Fuca/Gorda plate is being actively subducted beneath the leading edge of the North American plate. The CSZ in its entirety extends from the Mendocino triple junction to British Columbia. Plate convergence along the Gorda segment of the CSZ is occurring at a rate of approximately 30 to 40 millimeters per year (mm/yr) (Heaton and Kanamori, 1984). Rupture along the entire CSZ boundary may produce an earthquake with a maximum moment magnitude (Mw) of 9.0 or greater (Satake et al., 2003).

Table 2. Seismic Sources in the Project Vicinity[1]

Fault System	Distance from Site (Kilometers)	Direction from Site	Maximum Moment Magnitude[2]	Peak Ground Acceleration[3] (g)
Trinidad Fault	75	South	7.1	0.26
Cascadia Subduction Zone	36	West	9.0	0.18

[1] Based on EQFAULT (v. 2.01) and a digitized data file of the California Division of Mines and Geology Fault Activity Map of California (Jennings 1994).
[2]Earthquake magnitudes are expressed in terms of the moment magnitude scale (Mw) and were obtained from Tables of California Fault Parameters in Peterson et al. (1996), Cao et al. (2003),
[3]Peak ground accelerations are average values estimated for the maximum moment magnitude earthquake, using attenuation relationships developed by Boore et al. (1997), Campbell (1993 and 1997), and Sadigh et al.(1997) for a site underlain in the upper 30 meters by stiff alluvial soils.

3.2 Bluff and Subsurface Conditions

Based on observations of the bluff face made during our site reconnaissances of June 26, and July 8, 2014, and August 18, 2021, the soils beneath the Site consist of approximately 5 feet of moderately indurated dune sand and silt overlying 20 to 25 feet of weakly- to moderately cemented silty sandy poorly graded gravels (GP) and well-graded sandy gravels (GW). In our 2014 Report, the dune sands were incorrectly described as loose. The dune sands are instead partially indurated and are capable of creating almost vertical profiles, as observed during our site visits and in our review of historical aerial photographs. A boring log and a representative bluff face profile are included in Appendix 2. Franciscan Formation bedrock is exposed below the Bluff gravels approximately 200 feet south of the Site.

LACO subcontracted a geophysical seismic survey (2014) conducted by Advanced Geological Services to obtain subsurface data to determine depth and shear wave velocities of underlying soil strata and bedrock (Appendix 3). The geophysical survey comprised two transects, approximately 200-foot-long and generally oriented perpendicular to one another (Figure 2). The shallow soil profile as determined in the seismic refraction survey generally supports that described in the boring and bluff logs (Appendix 2). Bedrock was determined to range between 10 feet and 30 feet below the ground surface depending on location across the Site (See Seismic Reflection Survey, Appendix 3, Figure 2).

Around 1995, a foundation block wall was installed as a repair to the failed pier foundation below the portion of the building closest to the bluff (Ferrero, 1995). In the west portion of the existing building, the block wall is founded approximately halfway through the lower strata of the bluff in well-graded sandy gravels (GW). This area of the bluff face has a slope of approximately 1:2 (Photo 8).

3.3 Groundwater Conditions

Emergent groundwater and/or evidence of groundwater seepage was observed 200 feet to the south in the Franciscan sheared sandstone bedrock at the base of the bluff at approximately 20 feet above msl during our August 18, 2021, site reconnaissance.

3.4 Bluff Face and Slope Instability

Historical slope failure events provide evidence that coastal bluffs are susceptible to both mass wasting and erosion. Slope failures along the coastal bluffs in the vicinity of the Site typically occur as a result of toe erosion with shear failure in the weakly cemented soils and as tensile-exfoliation failures in areas that are moderately cemented. We observed evidence of previous or incipient slope failure along the bluff face approximately 3,700 feet to the south of the Site. These areas were generally associated with incised drainages that erode the backshore berm sufficiently to allow for wave action to contact the base of the bluff resulting in bluff failure.

The beach in this region has been characterized as accretionary at a rate of 0 to 1.5 feet per year (Hapke, C.J., Reid, D., and Richmond, B.M. 2006). Since the last site visit in 2014, vegetation (willows) has grown to the extent that approaching the bluff face south of the building from the beach is difficult (Photos 1 and 2, Appendix 4). Observations of the bluff face made during the 2021 site visit indicate that no bluff erosion has occurred at the Site when compared with observations of the 2014 site visits.

4.0 REVISED BLUFF RETREAT EVALUATION

4.1 Discussion and Methodology

Our 2014 long-term bluff retreat analysis was reevaluated using an aerial photographic review covering approximately 50 years from 1963 to 2013. Special attention was conducted to address scalability of the aerial photos to determine the minimum amount of erosion that would have to occur to be detected. Aerial photos obtained from Del Norte County were at a scale of 1 inch equal to 1000 feet and were stereo pairs which were viewed under magnification to yield a general scale of 1 inch equal to 500 feet. Aerial photos were also be scanned and viewed at approximately 1 inch equal to 100 feet. This was the best scale to assess the site for long term bluff erosion yielding a potential error of about ±2.5 feet. A list of the aerial photographs referenced is included as Appendix 5.

4.1.1 Vertical Aerial Photo analysis

The site-specific aerial photograph review utilized a constant transect through the Site to measure changes in distance to the bluff from a fixed location over time. A point along the centerline of Highway 101 and in line with the southern edge of the parking lot at the Nautical Inn Site was used as the fixed location for the years 1963 through 2013. Measurements from the fixed point on U.S. Highway 101extended to the bluff face at two locations. One point was at the south end of the property along the southern edge of the parking lot. The other was approximately 75 feet to the north where the existing building begins to approach the bluff edge. See DNC aerials for representative transects.

Coastal Commission Staff Report dated July 17, 2015, stated that the bluff edge could not be seen as it was obscured by vegetation. Site visits in 2014 and 2021 indicate that the vegetation at the top is not obscuring the bluff face even where nearly vertical as it does not overhang the face. The vegetation at the base of the bluff is obscuring the shallower sloped portions of the bluff, but since there has not been catastrophic removal or disturbance of the willows at the base of the bluff in any of the aerial photos it is unlikely that substantial erosion is occurring in these locations. The portion of the bluff face not visible in aerial photos is the area where the existing building projects approximately 4 feet over the bluff.

4.1.2 *Oblique Aerial Photos Review*

An analysis of oblique aerial photos collected from the California Coastal Records Project (californiacoastline.org) from 1972 to 2019 (Photos 3 through 7, Appendix 4) were reviewed and evaluated for bluff erosion. The general bluff top is marked out with a red line. The CCC makes note that the 1972 aerial photo shows what appears to be "mass wasting" from the bluff at the Site. The material just below the foundation that looks like mass wasting is the wrong color to be derived from the bluff face as the material is gray and bluff material is a brown. This is evident by areas of exposed bluff face just to the south clearly showing brown material.

In addition, the "tongue" of material is too long to be mass wasting from the bluff as it appears to be roughly twice as long as the bluff is high by comparing photos. A closer look indicates that the foundation below the nearest portion of the building appears to be piers as noted by the dark voids that look like windows (Photo 3, Appendix 4). The tongue area (yellow outline) became increasingly vegetated.

During the 2021 site visit LACO, investigated the foundation in the area of the pre-1995 repair. The slope at the bottom of the block wall footing is approximately 1.5:1 (Photos 6 and 8). The slope appears to extend to near the lower edge of the willows at the back beach, defined as the portion of the beach above mean high tide, approximately 20 feet above msl. Due to scale and different oblique angles, it was difficult to directly compare the bluff face between photos. However, the photos were of suitable quality to get a general sense of whether erosion was occurring and to approximate its extent. No significant bluff retreat can be noted on the photos at the Site. Vegetation has covered most of the non-vertical bluff faces and also the base of the near vertical portions of the bluff. The base of the bluff appears to be generally higher than storm surge allowing the willows to become well established.

Based on review of aerial (1963 to 2013) and oblique photographs (1972 to 2019), the edge of the bluff at the Site does not appear to have retreated during the time period covered by the photos. Distances from the edge of bluff to the fixed reference point for each aerial photo year reviewed were measured with no measurable retreat detected between the bluff edge and the center line of U.S. Highway 101. We estimate that there is the potential for approximately 2 the 4 feet in error based on measurement calculations and

clarity of photos over the time period. However, the review of the oblique photos did not exhibit any visual indications of bluff mass wasting. No scars from newly exposed failures were detectable in the oblique photos.

4.1.3 Foundation Evaluation

The remaining elements of the original foundation appeared to be concrete piers founded on the surface of the silty sands at the top edge of the bluff. Some of the remaining piers to either side of the block foundation wall appear to be partially rotated out of plumb. (Photos 8 and 9, Appendix 4) Behind the block wall, there appears to be no direct connection with the soils except near the foundation footing. At the south end of the block wall there is an approximately 8-inch gap between the block and the native bluff face. At this location, an 8-inch drainage pipe comes out from under the building between the wall and the bluff. The purpose of this drainpipe is unclear. Several loose blocks are visible in the gap above the pipe, apparently to keep it in place and to prevent material from falling through.

A sandy gravel layer within the bluff face thins at the foundation repair to approximately half the bluff height. The original foundation appeared to be long concrete piers along the height of the bluff where the upper sand unit thickens. The original building piers were founded in this upper sandy unit, which is partially indurated. The failure of the piers at the bluff edge appears to be partially due to proximity of the piers to the bluff edge (Photos 10 and 11, Appendix 4) and long-term loading at the edge of the bluff from the building, which destabilized and caused what appears to be a shearing failure of the soils below the piers (Photos 12 and 13, Appendix 4). Based on what remains of the original foundation elements, the failure does not appear to have been catastrophic.

5.0 QUANTITATIVE SLOPE INSTABILITY ANALYSIS

LACO performed a quantitative slope stability analysis of the bluff using the computer program Slide (version 5.0) developed by Rocscience, Inc., Toronto, Ontario. The software assesses the stability of the slope using Bishop's Method to compare the forces resisting failure to the forces driving failure. LACO stands by our 2014 bluff stability analysis, as the science and analysis were sound.

California Coastal Commission Memorandum W11.5 (Johnsson 2003) recommends establishing the bluff setback by combining the distance from the present bluff edge to the most distant slope failure surface of either a factor of safety equal to 1.5 under static conditions (termed F_S) or factor of safety equal to 1.1 under dynamic conditions (termed F_D). The factor of safety component with the greater distance is then added to the estimated erosion distance over a 75-year period. The factor of safety analysis prepared in 2014 indicates the failure distance associated with the F_S is greater than the distance associated with F_D and therefore should be used in the establishment of the setback at this Site.

6.0 SEA LEVEL RISE

6.1 Historical Relative Sea Level

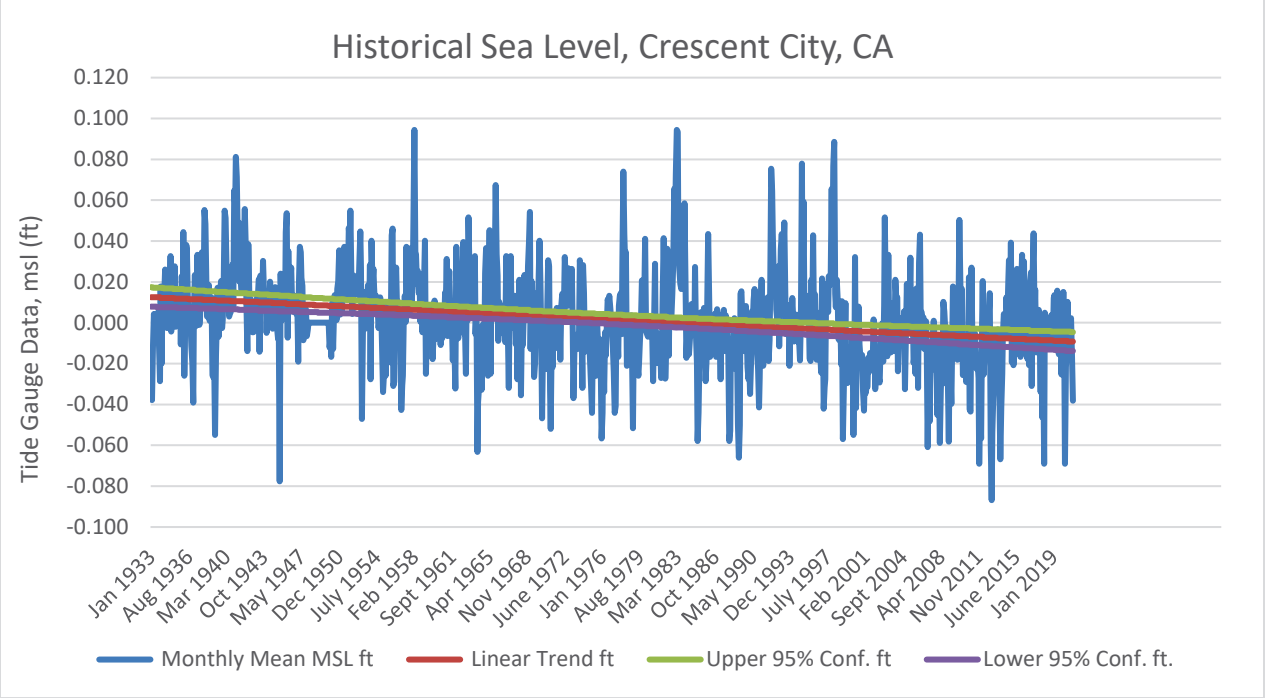
Relative sea level change is a product both of changes in global sea level and those of the land surface. Global, or eustatic, sea level is affected by many factors, primarily ocean warming, which causes the seawater to expand, along with the melting of land/sea ice. Changes to the elevation of the land surface, or vertical land motion (VLM), is influenced by a combination of factors ranging from glaciers (due to the weight of the ice on the land), adjustments due to plate tectonics (seismic and inter-seismic rises and falls),

and land subsidence (soil compaction, groundwater, and other fluid extraction). Relative sea level either rises if eustatic sea level is rising faster than VLM or falls if VLM rises faster than sea level.

Along the northern California coast, VLM is controlled primarily by the CSZ. The CSZ is the zone at which the North American plate is being subducted beneath the Gorda Plate offshore Northern California and the remnants of the Juan de Fuca Plate to the north. The act of subduction results in relatively little vertical land movement most of the time punctuated by a great deal during earthquakes. While the area between Cape Mendocino and approximately Humboldt Bay are generally rising as seismic stresses slowly relax during interseismic times, land levels near Crescent City are dropping. In Crescent City, this general negative VLM has resulted in falling sea levels in historical tide gauge data.

Figure 3 presents the monthly mean sea level without the regular seasonal fluctuations due to coastal ocean temperatures, salinities, winds, atmospheric pressures, and ocean currents. The plot presents the long-term linear trend as well as the 95 percent upper and lower confidence intervals.

Figure 3. Monthly Mean Sea Level, Crescent City, CA (1933-2017)



Note: These data represent monthly mean sea levels with the average seasonal cycle removed (NOAA, 2021).

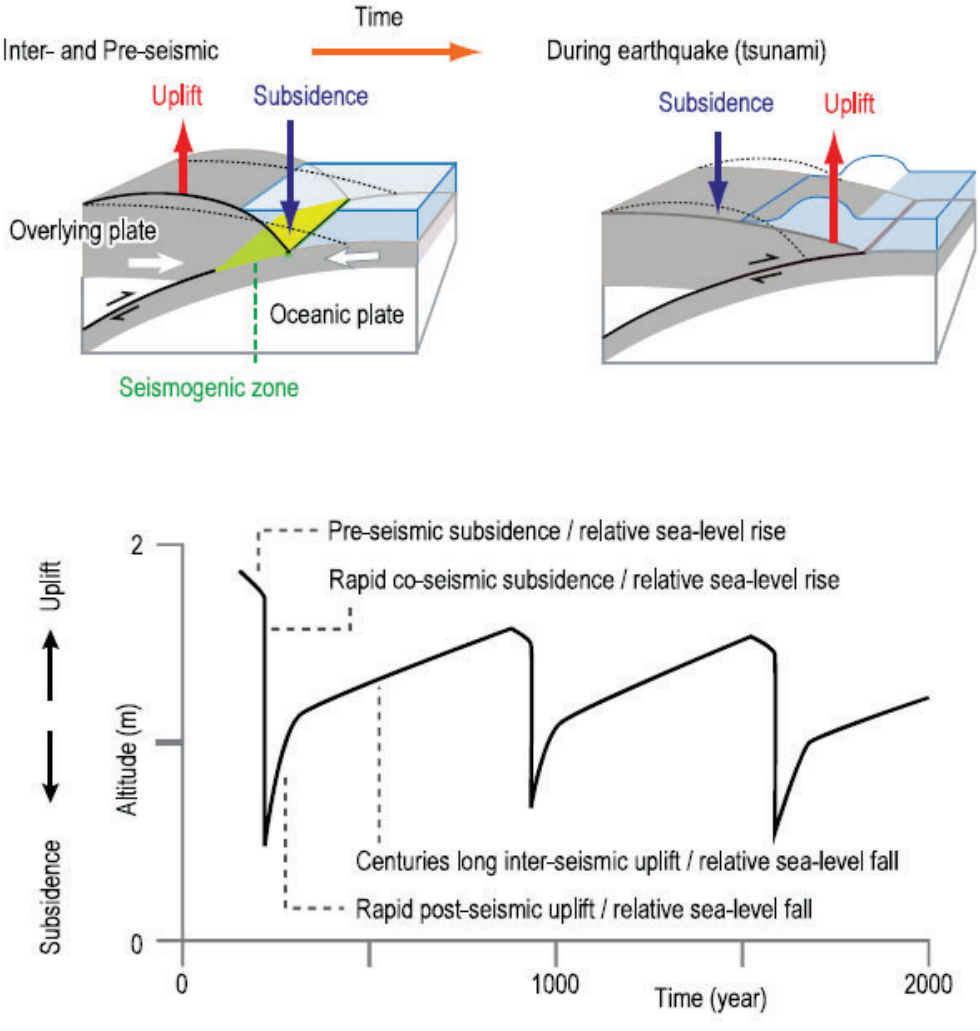
As these data were collected from a land-based tide gauge, they represent relative sea level (i.e., the combination of both eustatic sea level and VLM). Over the 84 years of records, mean relative sea level change at the Crescent City tide gauge was -0.75 ± 0.28 mm/yr, or -0.003 ± 0.0009 feet per year (ft/yr). This indicates an overall decline in relative sea level over the time period represented by these data.

Vertical land motion is the second part of the equation when examining changes in relative sea level. Continuous GPS (CGPS) records collected along the west coast since at least 2003 have been used to adjust

tide gauge data by accounting for changes in land elevation (NAS, 2012). The CGPS data station is located 10 kilometers (6.2 miles) from the Crescent City tide gauge and includes records from 1999. The VLM calculated for this time frame is 2.60 ± 0.40 mm/yr (0.0085 ± .001 ft/yr).

While the VLM data include only approximately 20 years of records and Crescent City tide gauge data cover 86 years, the National Academy of Science (NAS) research committee made the assumption that the rate of VLM has remained constant over the entire time frame. The tectonics that govern the behavior of the CSZ through multiple seismic events dating back 3,500 years have been studied since the 1990s (Atwater and Hemphill-Haley, 1997). The pattern of high amplitude seismic changes separated by slow elastic rebound during interseismic intervals over a timeframe of several hundred years per cycle gives validity to this assumption (Figure 4).

Figure 4. Historical VLM at Cascadia Subduction Zone (NAS 2012)



NAS (2012) used this deformation model to determine the rate of VLM at various locations along the U.S. west coast including Eureka, California and Coos Bay, Oregon. We interpolated between the values given for

these cities and obtained a rate for Crescent City of 2.73 mm/yr (0.009 ft/yr). This falls within the range cited above using CGPS data and is the value we used in the remainder of this report.

6.2 Predicted Changes Due to Eustatic Sea Level Rise

The State of California Natural Resources Agency (NRC) published Sea-Level Rise Guidance ("Guidance", 2018) to provide "a bold, science-based methodology for state and local governments to analyze and assess the risks associated with sea-level rise, and to incorporate sea-level rise into their planning, permitting, and investment decisions." This Guidance provides potential rates of relative sea level change under a variety of scenarios. These include risk tolerance (low, medium-high, and extreme risk aversion) and greenhouse gas emissions (low and high emissions). Greenhouse gas emissions are important as the model indicates that the high emissions scenarios result in higher relative sea levels than the low emissions. The following discussion relies on data presented in the Guidance without verification of accuracy.

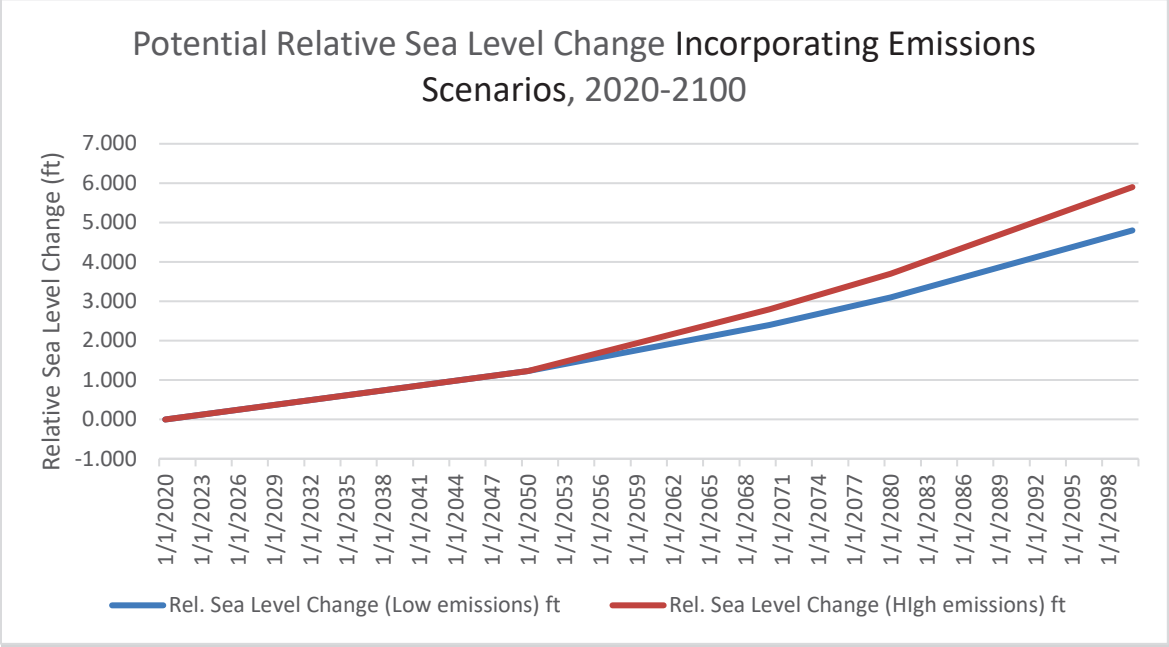
Relative sea levels for Crescent City were provided for the timeframe from 2030 through 2100 (NRC, 2018). These values are shown in Table 3 below. Values for 2030 and 2050 include only the high emissions scenario; however, values corresponding to both high and low greenhouse gas emissions are provided for 2060 through 2150. Our evaluation of the potential sea level changes in Crescent City used the medium-high risk aversion scenario through 2100. While values are provided through 2150, the Guidance indicates that projections after 2100 should be used with caution due to increased uncertainty. We included the current values discussed above for 2030 and projections through 2100.

Table 3. Relative Sea Level Change, 2030-2100

Year	Relative Sea Level Change in feet (Low emissions)	Relative Sea Level Change in feet (High emissions)
2030	-	0.3
2050	-	0.4
2060	0.7	0.9
2070	0.9	1.2
2080	1.1	1.6
2090	1.3	2.0
2100	1.5	2.5

From these data, the historical trend of falling relative sea levels caused by VLM outpacing changes in eustatic sea level are anticipated to reverse between 2020 and 2030. Based on these data, from that point through the end of the projection in 2100, relative sea level will continue to rise. The model diverges after 2050 to reflect the potential impacts of the two different greenhouse gas emissions scenarios. Chart 1, below, illustrates the projected changes in relative sea level.

Chart 1. Projected Relative Sea Level Changes, 2020-2100, Incorporating High and Low Emission Scenarios



6.3 Potential Impacts

The effects of relative sea level rise locally include, among others, an increase in flooding due to seasonal storms and high tides, shoreline erosion, and saltwater intrusion, as well as an increase in the inundation zone due to tsunamis (PND, 2019). In order to demonstrate the potential impacts of sea level rise at the site, we used an online tool created by NOAA to provide simulations of the extent of these effects for different values of sea level rise. The NOAA Sea Level Rise Viewer (Viewer) was developed by the NOAA Office for Coastal Management to allow coastal managers and planners to visualize various sea level rise scenarios both from a type of impact viewpoint as well as from a perceived level of risk. We used this tool to illustrate the potential impacts over a projected 750-year lifespan of the project and the more conservative high greenhouse gas emissions scenario and modeled a sea level rise of 4.72 feet by the year 2100.

The Viewer is limited to 10-year intervals and whole values of sea level rise. We selected an intermediate-high-risk level in this assessment which yielded approximately 5 feet of projected sea level rise, rounding up from 4.72 feet, by the year 2100. In general, the area in the region most prone to impacts of sea level rise are the existing low-lying areas surrounding Smith River as well as Lake Earl to the south.

The mapping confidence is based on the proximity of the tide gauge, in this case at the Crescent City Harbor, and the availability of continuous GPS data. At the scale of maps presented in Figures 5 through 7, the location of the tide gauge does not plot. Figure 6 illustrates the mapping confidence at the Site. Note that the mapping confidence is not high, and this may reduce the reliability of the following projections. However, the base of the bluff is at approximately 20 feet above msl.

Figure 5. Mapping Confidence at the Nautical Inn Site



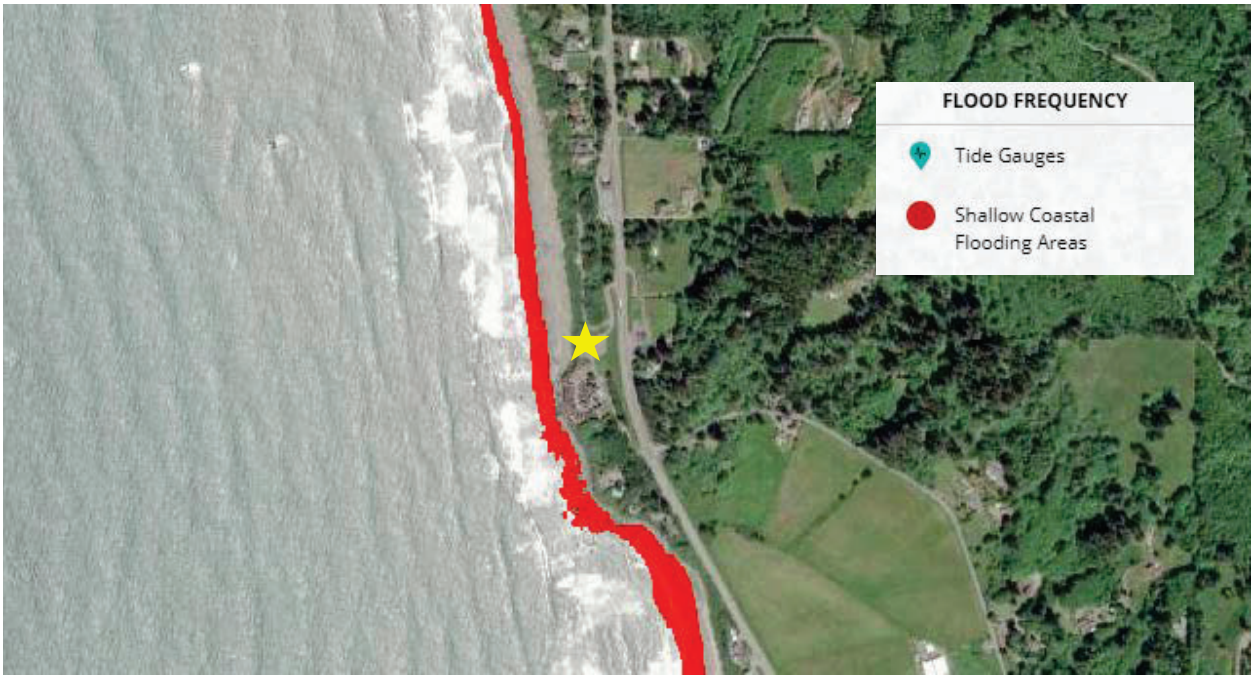
As described above, we are presenting the modeled impacts of a relative sea level rise of 5 feet msl by 2100. Figure 6 presents the anticipated area of impact. Degree of sea level rise is indicated by shades of blue, with lighter shades representing lower water depths. Sea level rise as visualized at the site indicate a fairly narrow light blue band.

Figure 6. Area of Impact for Relative Sea Level Rise of 5 feet msl, at the Nautical Inn Site



Figure 7 presents the anticipated area of impact due to high tide flooding, with those areas anticipated to experience shallow coastal flooding associated with high tides are indicated in red. Coastal flooding due to high tide will occur more frequently as sea level rises and the magnitude of high tide increases.

Figure 7. Area of Impact High Tide Flooding, (at the Nautical Inn Site



The highest storm surge recorded in the Crescent City tide gauge between 1951 and the present was a height of 2.17 feet above msl recorded on January 29, 1983. This storm surge, if coincident with a sea level rise of 5 feet, would result in inundation approximately 7 feet above current conditions. The back beach at the Site is 20 feet above mean sea level.

7.0 CONCLUSION

7.1 Bluff Retreat Rate Analysis

The bluff retreat rate analysis indicates that during the time of the available aerial photographs (1963 to 2013) no measurable retreat could be noted at the Site. As such, based on the potential error from the aerial photo analysis, if a conservative 1 foot in 10 years is used for the design life of the structure of 75 years we estimate that bluff retreat could be as much as 7.5 feet. Based on the age of the existing building (late 1940s) and proximity to the bluff, if that amount of erosion was occurring it is unlikely that the structure would be standing.

The failure of the bluff under the western portion of the building, discussed in Section 4.1.2, above, appears to be directly due to loading of the bluff edge by the building, which ultimately resulted in a load shear failure of the indurated sands beneath the pier foundation in this location. Erosion played no role in the failure.

7.2 Sea-Level Rise

Historical tide gauge measurements and research on changes in VLM at the project location, combined with future projections of sea level under low and high greenhouse gas emission scenarios, indicate a potential relative sea level rise of approximately 5 feet msl by year 2100. Assuming a project lifespan of 75 years and the data input requirements of the NOAA Sea Level Rise Visualizer, we used an expected sea level rise of 5 feet by the year 2100. The primary effects of sea level rise at the project locations by 2100 are identified as the following:

- Increased water levels due to sea level rise, shallow coastal flooding associated with high tides.
- Inundation of the back beach due to large storm events will be exacerbated at the Site with rising sea levels.

8.0 SETBACK

Using the results of our reevaluated bluff retreat study for this project and the slope stability analysis, LACO recommends a minimum setback distance of 16 feet from the 38-foot elevation contour as referenced in our 2014 report.

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P:\8000\8062 Gul Jaisinghani\8062.02 Nautical Inn Geotech Evaluation\08 Geology\Reports\8062.02 Bluff Retreat and Erosion Reevaluation 20210909.docx

APPENDIX 1

ASFE Brochure

Important Information About Your

Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

The following information is provided to help you manage your risks.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you —* should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.

ASFE
The Best People on Earth

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APPENDIX 2

Soil Logs

BORING NUMBER B1

LACO

CLIENT Gul Jaisinghani
PROJECT NAME Nautical Inn
PROJECT NUMBER 8062.00
PROJECT LOCATION Smith River
DATE STARTED 6/26/14 **COMPLETED** 6/26/14
GROUND ELEVATION _____ **HOLE SIZE** 3.24 inches
DRILLING CONTRACTOR Fisch Drilling
GROUND WATER LEVELS:
DRILLING METHOD Rotary Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY JMW **CHECKED BY** GLM
AT END OF DRILLING ---
NOTES

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	WET UNIT WT. (pcf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(ML) Dark brown, dry, silt with a trace of sand and gravel, grades to brown with depth.	ST			109	98	11				
5		(ML) Yellow brown, moist, silt with some sand and gravel.										
		(GW) Brown, moist, dense, well graded gravel with silt and sand.	SPT		11-26-33 (59)							4

Refusal at 9.0 feet.
Bottom of borehole at 9.0 feet.

GEOTECH LOG - COLUMNS - GINT STD US LAB.GDT - 7/21/14 13:41 - P:\GINT FILES\PROJECTS\8062.00 NAUTICAL INN.GPJ

BORING NUMBER Bluff Face

LACO

CLIENT Gul Jaisinghani
PROJECT NAME Nautical Inn
PROJECT NUMBER 8062.00
PROJECT LOCATION Smith River
DATE STARTED 6/26/14 **COMPLETED** 6/26/14
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR _____
GROUND WATER LEVELS:
DRILLING METHOD N/A
AT TIME OF DRILLING ---
LOGGED BY JMW **CHECKED BY** GLM
AT END OF DRILLING ---
NOTES Logged Bluff Face exposure

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	WET UNIT WT. (pcf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		(ML) Brown, dry, silt with a trace of sand and gravel, grades to brown with depth.										
5		(GW-GM) Gray brown, dry, well graded gravel with silt and sand.										
10		(GW) Gray, dry well graded gravels with some sand. gravels are imbricated and slightly cemented.										
		(GP-GM) Gray, dry, poorly graded gravels with some sand and silt . gravels slightly cemented.										
15												
		(SP) Light Gray, dry to moist poorly graded sand. (beach)										
20												

Bottom of borehole at 20.0 feet.

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APPENDIX 3

Seismic Reflection Survey

ADVANCED GEOLOGICAL SERVICES

1605 School Street, #4
Moraga CA 94556
925 (808-8965)

Gary I. Manhart, Senior Geologist
LACO Associates
Eureka | Ukiah | Santa Rosa, California

Subject: Report
Seismic Refraction and Seismic Surface-wave Surveys
Nautical Inn Restaurant Site, 16850 US Highway 101
Smith River, California

Dear Mr. Manhart:

1.0 INTRODUCTION

This letter presents the results of Advanced Geological Services, Inc. (AGS) seismic refraction and seismic surface-wave surveys in support of LACO Associates' geotechnical investigation at the Nautical Inn Restaurant site, 16850 U.S. Highway 101, Smith River, California (Figure 1). The investigation objective was to assess the depth, configuration and velocity of bedrock.

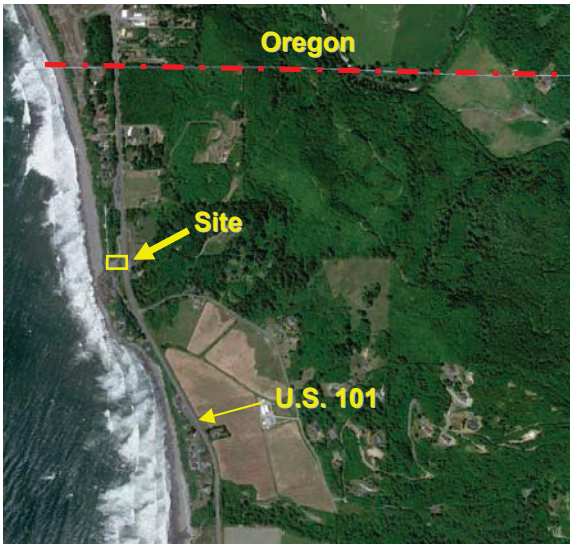


Figure 1 - Site Location- Smith River, California

AGS used seismic refraction to obtain bedrock depth and compressional (P-) velocity was seismic refraction. A seismic surface-wave survey was also performed to assess the shear (S-) wave velocity of bedrock. The investigation was performed on July 9, 2014 by AGS senior geophysicist Roark Smith.

2.0 SUMMARY OF FINDINGS

- Depth to top-of-bedrock ranges from 5 to 30 feet below ground surface (bgs), and bedrock is generally shallower in the southern portion of the site. Subsurface profiles showing seismic velocity layers and interpreted bedrock depth are presented on Figure 2.

- Bedrock exhibited compressional- (P-) wave velocities between 8,000 and 9,000 feet per second (fps). The surface-wave data indicate that the shear (S-) wave velocity of bedrock is approximately 1,700 fps. S-wave velocity models showing S-wave variations with depth are presented on Figure 3.

3.0 SITE DESCRIPTION

The topographically flat Smith River site is on a bluff between U.S. Highway 101 and the edge of a sea cliff overlooking a wide beach, approximately 25 feet below, and the Pacific Ocean. At the time of the investigation, the Nautical Inn Restaurant building occupied the western portion of the site, at the cliff's edge. Except along its northern edge, the ground surface was mostly covered with asphalt pavement. One seismic line was located in the grassy area along the site's northern edge, and a second perpendicular line was located on the asphalt-paved parking lot (Figure 2).

4.0 FIELD PROCEDURES

Seismic Refraction
At the direction of LACO Associates personnel, AGS laid a fiberglass tape measure across the ground surface to mark the first seismic refraction line (SL-1) location. AGS then placed 24 geophones in the ground at 5- and 10 -foot spacings to form a 195-foot-long seismic line. The geophones were coupled to the ground surface by means of 4-inch spikes. Three shot points were used— one was placed in the middle of the geophone array and one at each end of the array, 5 feet beyond the nearest geophone.

AGS produced seismic energy through multiple impacts with a 16-lb sledge hammer against a metal plate placed on the ground surface at each shotpoint location. Ten hammer blows were used ("stacked") at the end-of-line shotpoints and five blows were used at the mid-line shotpoints. The P-waves produced by the hammer impacts were detected using Mark Products 14-Hz high output geophones. The detected seismic signals were recorded using a DAQLink II seismic system connected to a laptop computer. For the surface-wave survey, AGS swapped out the 14-Hz geophones for 4.5-Hz geophones, which are better suited for detecting the lower-frequency portions of the surface-wave data.

After seismic refraction data were collected along the first line, AGS moved the tape measure to mark a second line (SL-2) roughly perpendicular to the first line (Figure 2). AGS then repositioned the geophones along the second line and collected refraction and surface-wave data in same manner as at the first line. It is worth noting that, because the second line was located on asphalt pavement, the geophones spikes were removed and the geophones were mounted onto heavy steel plates, which were then coupled to the pavement with an adhesive product. After the seismic data were obtained, AGS performed a hand-level survey to measure the relative elevation changes along the two seismic lines so that the ground surface topography could be incorporated into the data analysis. Finally, AGS plotted the seismic line locations onto a LACO-provided basemap by using a tape measure to reference the line to fences, buildings, and other prominent site features.

Seismic Surface-Wave Survey
For the surface-wave survey, AGS used the same alignments that were used for the two refraction lines, but the 14-Hz refraction geophones were replaced with lower-frequency 4.5-Hz geophones, which are more suitable for surface-wave work. A single shotpoint located in-line with the array and 20 feet away from the first geophone was used. As with the refraction work,

seismic energy was generated through multiple impacts with a 16-lb sledge hammer against a metal plate placed on the ground surface at each shotpoint location. The detected seismic signals were recorded using a DAQLink II seismic system connected to a laptop computer, the same seismic system that was used for the refraction work.

5.0 GEOPHYSICAL METHOD OVERVIEW

5.1 Seismic Refraction

The seismic refraction method uses compressional (P-) wave energy to delineate seismic velocity layers within the subsurface. Interpretation entails correlating the velocity layers to geologic features such as soil and various types of bedrock. To perform a refraction survey, an elastic wave (compressional, or P-wave) is generated at certain locations (shotpoints) along a survey line. The P-wave energy is usually produced with a small explosion or by striking the ground with a sledgehammer. As the P-wave propagates through the ground it is refracted along boundaries between geologic layers with different seismic velocities.

Part of the refracted P-wave energy returns to the ground surface where it is detected by vibration-sensitive devices called geophones, which are placed in a co-linear array along the seismic survey line. The geophone data are fed to a seismograph, where they are recorded, and then to a computer, where they are analyzed to determine the depth and velocities of subsurface seismic layers. Key data for refraction analysis are the positions of the geophones and shotpoints along a seismic line, and the amount of time it takes for the refracted wave to travel from the shotpoint to each geophone location. Because the P-wave is the fastest traveling of all types of seismic waves, it can be readily identified as the first deflection ("first break") on a seismic trace.

Additional discussion of the refraction method, its limitations, and the relationship between seismic velocity and geologic materials is presented in Appendix A.

5.2 Seismic Surface Wave

Seismic surface-wave surveys use essentially the same field set-up as a refraction survey, but a different part of the recorded seismic signal— the Rayleigh (surface) wave is analyzed instead of the P-wave. Briefly, a surface-wave survey entails measuring the velocity of surface waves using an array of motion detectors (geophones) placed on the ground surface. Because surface-wave velocity closely follows shear-wave velocity (90 to 95% of V_S), surface-wave velocity data can be used to estimate shear wave velocity (V_S). Surface-Waves are seismic waves that travel along or near the surface of the earth; they are generated by both natural (e.g., wind, ocean waves) and man-made (e.g., hammer blow, traffic noise, factory vibration) sources. Surface-Waves travel in assemblages of frequencies, with each frequency having a corresponding wavelength. Because surface-waves are influenced by subsurface material to a depth approximately equal to the surface-wave's wavelength, a velocity vs. depth profile can be generated by measuring the velocity of surface-waves of varying wavelengths. Short wavelengths (higher frequencies) respond to the material properties (e.g., stiffness) of shallower materials while longer wavelengths (lower frequency) respond to deeper materials.

Specialized computer software is used to identify surface-waves in the recorded data and prepare a 'velocity spectrum' image, which the geophysical analyst interprets to produce a 'dispersion

curve' to depict how velocity varies with frequency. The geophysicist then prepares a velocity layer model from which a synthetic dispersion curve is produced. The analyst then adjusts the model to obtain a 'best fit' between the synthetic dispersion curve and the actual dispersion curve that was interpreted from the velocity spectrum. The degree or closeness of the fit between the interpreted and synthetic curves provides an indication of how well the model represents actual subsurface conditions. The final output from a surface-wave survey is a one-dimensional (1-D) profile showing S-wave velocity variations with depth at a point that is taken to be at the center of the geophone array.

6.0 DATA PROCESSING AND ANALYSIS

The seismic refraction data quality for this project was good and first break picks were made with confidence. Data quality was enhanced by "stacking," which entailed using multiple hammer blows at each shotpoint location to improve the signal-to-noise ratio. The additive affect of stacking of multiple hammer blows at the same location enhances or increases the amplitude of the signal (i.e., the refracted wave arrival) while amplitude of the background noise, which, being random in nature, tends to cancel itself on successive hammer blows and remains largely unchanged. Stacking was made necessary by the vibratory noise from vehicle traffic along U.S. 101. AGS stacked 10 hammer blows at the end-of-line shotpoints and 5 blows at the center shotpoint.

Seismic data were processed using the *SeisImager* and *SeisImager/SW* software packages for the refraction and surface-wave data, respectively. Briefly, *SeisImager* is a computer inversion program that generates an initial velocity layer model, produces synthetic data from the model, and then adjusts the model so that the synthetic data better matches the observed field data. The agreement between the synthetic and observed data provides an indication of how well the model represents the true subsurface conditions.

6.1 Refraction Processing and Analysis

First, AGS used the *SeisImager* module *PickWin* to interpret ("pick") the P-wave arrivals ("first breaks") for each of the shotpoint data sets ("shot gathers") per line. *PickWin* was also used to check (against the geophysicst's field log) that the proper locations were assigned to the geophones and shotpoints. Next, the first break files were fed to the SeisImager module *PlotRefra*, which was used review time-distance (TD) plots for the two seismic lines and assign a seismic layer to each arrival time. For the initial refraction analysis, each P-wave arrival is considered to have refracted from a distinct seismic layer. The number of layers resolved by the seismic survey, and their thickness and average velocity, are revealed by straight line segments on the TD plot; because these straight-line segments represent a constant velocity condition within the subsurface, they are usually considered to represent a distinct geologic layer. The topographic elevation files were incorporated into the analysis at this point. Next, a time-term inversion was performed to produce models showing the velocity layering along each of the two seismic lines.

6.2 Surface-Wave Processing and Analysis

In general, surface wave data processing entails first producing a velocity spectrum image, which shows the phase velocity for the various frequencies of surface waves detected (Figure 3). This

image is used as the basis for interpreting ("picking") a dispersion curve, which is a graph that depicts how surface-wave velocity varies with frequency (hence, depth). The dispersion curve is then used to prepare an initial 1D model of surface-wave velocity versus depth using a one-third wavelength approximation (i.e., a given phase velocity is assigned to a depth that is one-third of the wavelength of the corresponding surface-wave). The initial velocity layer model is then adjusted using an inversion process until the corresponding synthetic dispersion curve achieves a "best-fit" match to the original dispersion curve that was interpreted from the observed data (i.e., the velocity spectrum image). The degree or closeness of the fit between the interpreted and synthetic curves provides an indication of how well the model represents actual subsurface conditions.

Accordingly, AGS first used the *SeisImager/SW* module *PickWin* to check that the proper geophone and shotpoint locations were incorporated into the data. *PickWin* was then used to perform the phase velocity-frequency transformation and pick a dispersion curve. Next, the *WaveEq* module was used to edit the dispersion curve and prepare an initial model of S-wave velocity (V_s) with depth. Next, *WaveEq* was used to perform the inversion that produced the final V_s models. The inversion was performed using 15 layers and 10 iterations and 15 layers; it achieved an RMS error of 2.5%, or 54 fps for SL-1 and an RMS error of 2.9%, or 70 fps for SL-2.

7.0 RESULTS

The investigation results are presented on Figures 2 and 3. Figure 2 presents P-wave velocity layer cross-sections generated from the seismic refraction data; Figure 2 also includes a site map showing the seismic line locations. Figure 3 presents the surface-wave survey results in the form of velocity spectrum images and interpreted dispersion curves, along with the associated velocity models showing S-wave velocity variations with depth at a point that is considered to be the center of each geophone array.

The refraction data indicate that depth to top-of-bedrock ranges from 5 to 30 feet below ground surface (bgs), with bedrock being shallower in the southern portion of the site. Three velocity layers were identified from the refraction data— a thin upper layer exhibiting a P-wave velocity between 1,000 and 1,150 feet per second (fps) that represents surface soil, a 4- to 20-foot thick middle layer exhibiting a P-wave velocity between 3,600 and 4,100 fps that is interpreted to represent alluvium, and a bottom layer exhibiting a P-wave velocity between 8,000 and 9,000 fps that is interpreted to represent bedrock.

The surface-wave data indicate that the S-wave velocity of shallow bedrock is approximately 1,700 fps. The S-wave model generated from data obtained along SL-1 shows a layer boundary at about 18 feet bgs, with the upper layers exhibiting S-wave velocities around 1,000 fps compared to lower layers (corresponding to bedrock) exhibiting S-wave velocities of 1,700 and greater. The model for SL-2 also shows a layer boundary at about 18 ft bgs; however, it does not show the same amount of contrast between the upper and lower layers. Along SL-2, the upper layers exhibit somewhat higher S-wave velocities, around 1,300 fps, while the lower layers exhibit velocities similar to those observed along SL-1. This slight discrepancy is attributed to natural geologic variation, which includes shallower bedrock along SL-2, and to the presence of

pavement (and presumably the underlying baserock fill material), which likely changed the nature of surface-wave generation and transmission along that line, as compared to SL-1.

8.0 CLOSING

All geophysical data and field notes collected as a part of this investigation will be archived at the AGS office. The data collection and interpretation methods used in this investigation are consistent with standard practices applied to similar geophysical investigations. The correlation of geophysical responses with probable subsurface features is based on the past results of similar surveys although it is possible that some variation could exist at this site. Due to the nature of geophysical data, no guarantees can be made or implied regarding the targets identified or the presence or absence of additional objects or targets.

AGS appreciates working for you and we especially enjoyed this project, particularly the site's picturesque location overlooking the Pacific Ocean. We look forward to working with you again.

Sincerely,



Roark W. Smit
Senior Geophysicist
Advanced Geological Services, Inc.

Figures: Figure 1 Site Location (imbedded in Report text)
Figure 2 Seismic Refraction Survey Results
Figure 3 Seismic Surface-wave Survey Results

Attachments: Appendix A: Seismic Velocity and Limitations of the Refraction Method

APPENDIX A

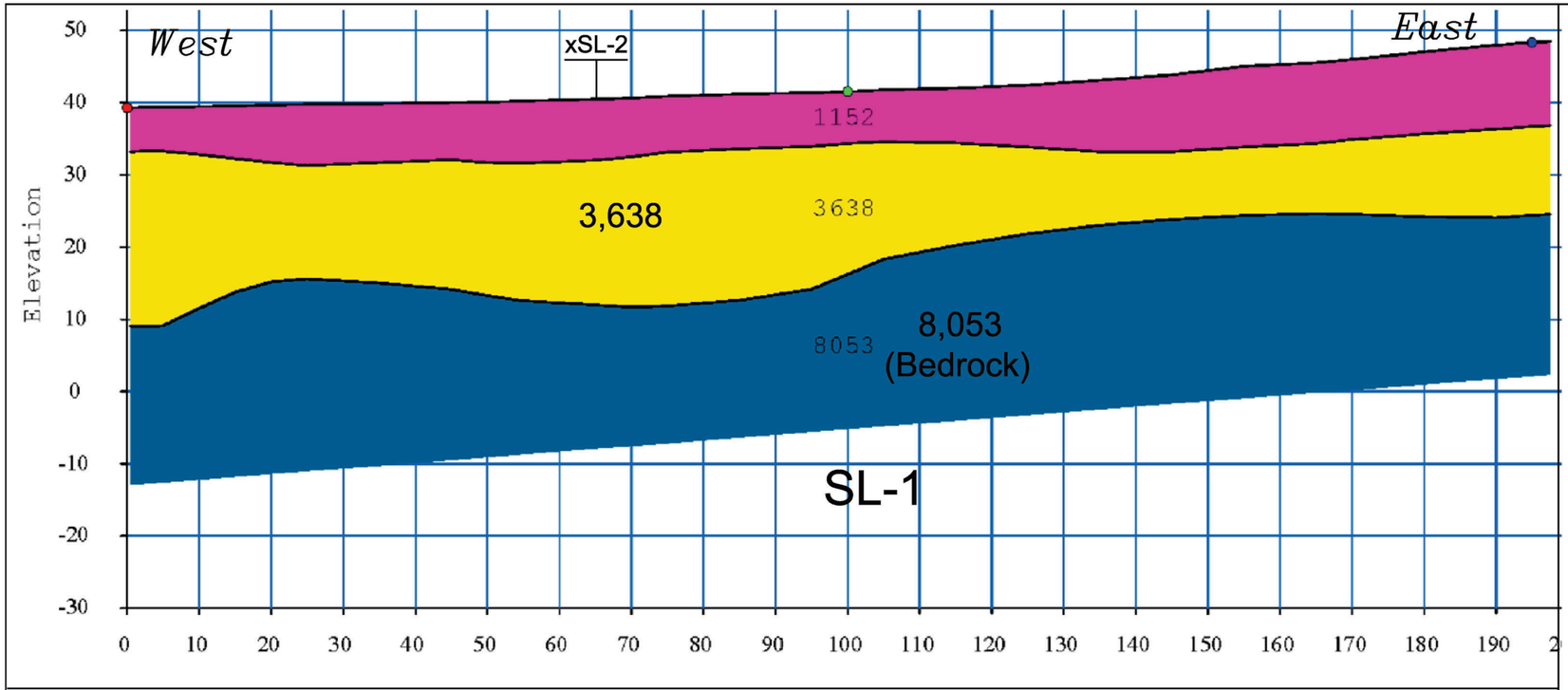
SEISMIC VELOCITY AND LIMITATIONS OF THE REFRACTION METHOD

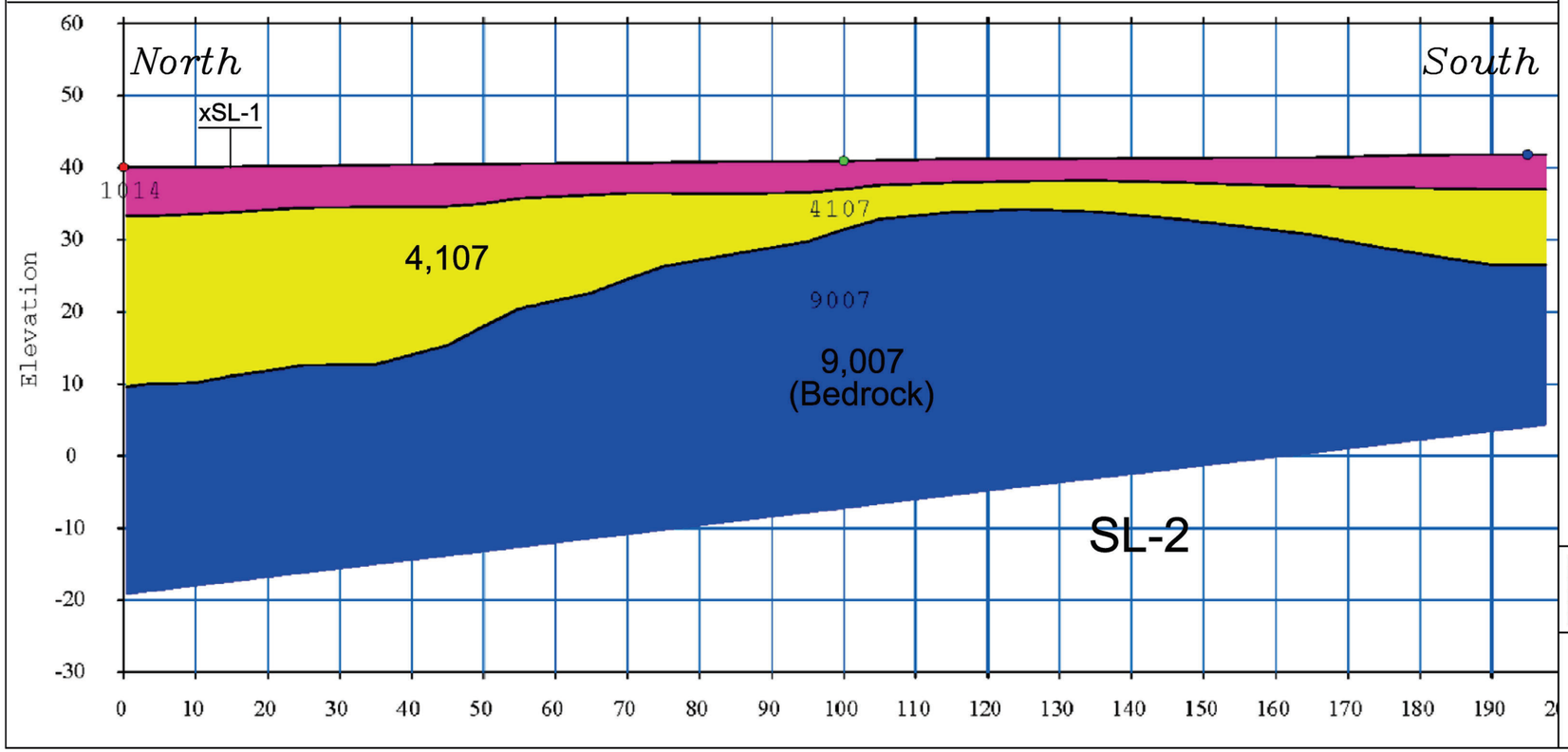
The physical properties of earth materials (fill, sediment, rock) such as compaction, density, hardness, and induration dictate the corresponding seismic velocity of the material. Additionally, other factors such as bedding, fracturing, weathering, and saturation can also affect seismic velocity. In general, low velocities indicate loose soil, poorly compacted fill material, poorly to semi-consolidated sediments, deeply weathered, and highly fractured rock. Conversely, high velocities are indicative of competent rock or dense and highly compacted sediments and fill. The highest velocities are measured in unweathered and little fractured rock.

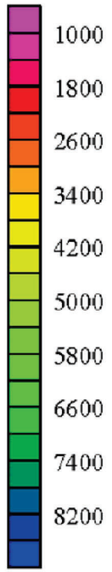
There are certain limitations associated with the seismic refraction method as applied for this investigation. These limitations are primarily based on assumptions that are made by the data analysis routine. The data analysis routine assumes that the velocities along the length of each spread are uniform. If there are localized zones within each layer where the velocities are higher or lower than indicated, the analysis routine will interpret these zones as changes in the surface topography of the underlying layer. A zone of higher velocity material would be interpreted as a low in the surface of the underlying layer. Zones of lower velocity material would be interpreted as a high in the underlying layer. The data analysis routine also assumes that the velocity of subsurface materials increase with depth. Therefore, if a layer exhibits velocities that are slower than those of the material above it, the slower layer will not be resolved. Also, a velocity layer may simply be too thin to be detected.

The quality of the field data is critical to the construction of an accurate depth and velocity profile. Strong, clear “first-break” information from refracted interfaces will make the data processing, analysis, and interpretation much more accurate and meaningful. Vibrational noise or poor subsurface conditions can decrease the ability to accurately locate and pick seismic waves from the interfaces.

Due to these and other limitations inherent to the seismic refraction method, resultant velocity cross-sections should be considered only as approximations of the subsurface conditions. The actual conditions may vary locally.







EXPLANATION

SL-1	SEISMIC LINE DESIGNATION
9,007	COMPRESSIONAL (P-) WAVE VELOCITY (FEET PER SECOND)

SEISMIC LINE LOCATION MAP



ADVANCED GEOLOGICAL SERVICES

1605 School Street
Suite 4
Moraga, CA 94556
(925) 808-8965

Seismic Refraction Survey Results- P-Wave Velocity Layering

Nautical Inn Restaurant

LOCATION: Smith River, CA

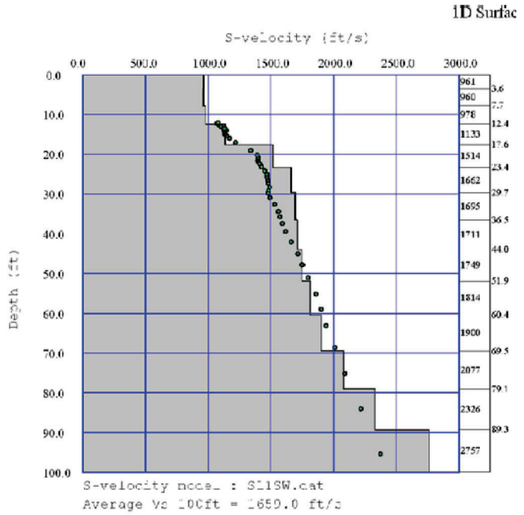
CLIENT: LACO Associates

PROJECT #: 14-038-1CA

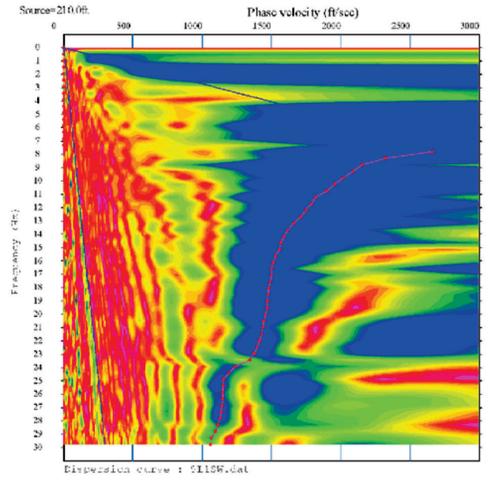
DATE: July 10, 2014 DRAWN BY: R. SMITH

FIGURE 2

SL-1

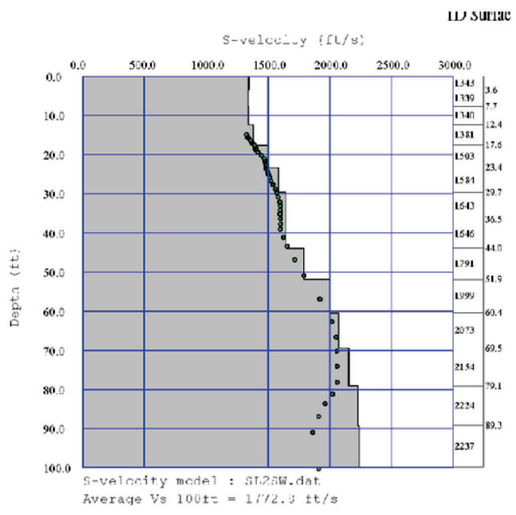


S-Wave Velocity Model, SL-1

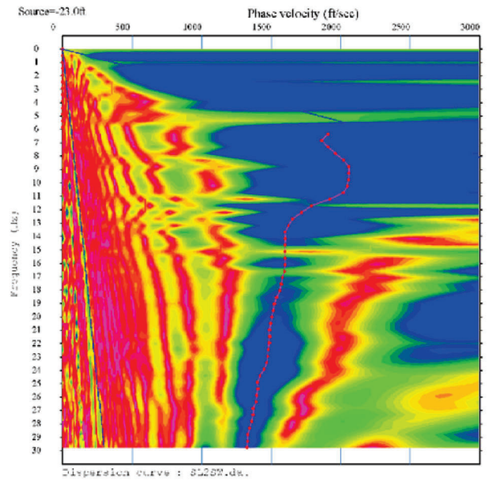


Phase Velocity Image and Dispersion Curve, SL-1

SL-2

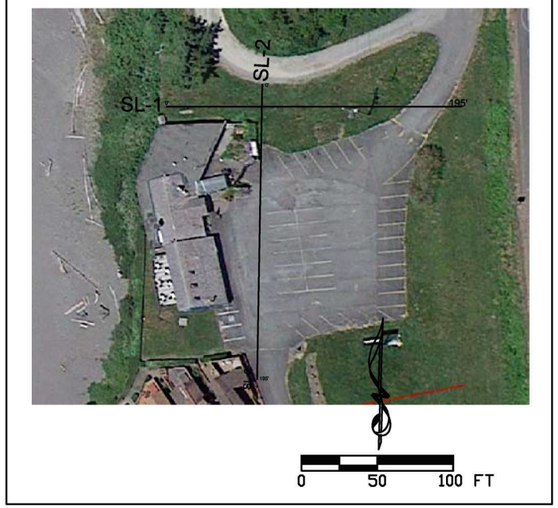


S-Wave Velocity Model, SL-2



Phase Velocity Image and Dispersion Curve, SL-2

SEISMIC LINE LOCATION MAP



ADVANCED GEOLOGICAL SERVICES

1605 School Street
Suite 4
Moraga, CA 94556
(925) 808-8965

Seismic Surface-Wave Survey Results-
S-Wave Velocity Models
Nautical Inn Restaurant

LOCATION: Smith River, CA

CLIENT: LACO Associates

PROJECT #: 14-038-1CA

DATE: July 10, 2014 DRAWN BY: R. SMITH

FIGURE 3

APPENDIX 4

Site Photographs



Photo 1: Bluff face from beach in 2014



Photo 2: Bluff face from beach in 2021, note the growth of willows at the base of the bluff



Photo 8: Block foundation wall looking north.

Photo 9: 8-inch drain pipe between Block foundation wall and bluff with blocks stuffed in gap





Photo 10: portion of original pier foundation and northern end of block foundation wall



Photo 11: Wedges to compensate for pier rotation.



Photo 12: joist support on top of original bluff surface and shear failure face exposed . Approximately 6 feet from block foundation wall



Photo 13: Concrete footing at old pier on south end of block foundation wall.

Photo 4: 1979



Photo 5: 1993



Photo 6: 2009



2009

Photo 7: 2019



APPENDIX 5

List of Aerial and Oblique Photographs

1972



1979



1987n

1987s

1993


6-16-93 15:01 1:12,000
CDBW-BBK-C 208-26
DEPT. OF WATER RESOURCES
CALIF.
STATE OF
AERIAL SURVEYS
CAMERA RC8 152.99
FLT LINE 208 6000

2002

2005

2009

2013



2019

1963



1963


N
DNC-3 4-29
OREGON CALIF
Boundary
Oregon Calif
Bndry
4-29-1
5-31-2
5-31-1

1969



1969



1975



1975



1996



1996




5-13-03
DEL NORTE-03 4B-11

1" = 1000'



LEE TROMBLE ENGINEERING
240 Douglas Park Drive
Crescent City, CA 95531

Phone (707) 464-1293
FAX (707) 465-8358

December 15, 2025

Karina Timmer
Planner
Del Norte County
Department of Community Development
981 H Street, Suite 110
Crescent City, CA 95531

re: Nautica Beach Resort
UP 2601C, APN 101-070-022

Dear Ms. Timmer:

On behalf of Daniel Dahan, please find attached my revised plot plan for the proposed Nautica Beach Resort at 16850 Highway 101 N Smith River, APN 101-070-022. As you know, Mr. Dahan has applied for a County Use Permit to develop the property with four park model guest lodging units. This letter is to respond to the items outlined in the County's August 2025 Environmental Review Committee meeting identified as information necessary to complete the application. The following responses are in the numerical order presented in the ERC summary.

1. The September 10, 2021 Technical Memorandum – "Bluff Retreat and Erosion Reevaluation, Nautical Inn" by LACO recommended a 16 foot construction setback from the elevation 38 contour. The park model units will be set further than 16 foot back from the bluff, and the site-built decks will be reduced in size, or otherwise reconfigured to meet the 16 foot setback.

   Of course, the present proposal, including gravel placement under the park model units and construction of small near-grade decks, will result in minimal disruption of the ground in proximity to the bluff, as compared to construction of a 20 unit three story motel, for which the 2021 report was pertinent.

2. The plot plan has been revised/ supplemented to address Items 2a, 2b, 2c, 2d, 2e and 2f.

3. It is my understanding that the County has received a will-serve letter from the SRCSD. If not, I have included a copy of the will-serve letter herewith.

4. The Demolition Plan is included on the plot plan. The existing reinforced masonry wall underpinning a westerly portion of the old restaurant is shown on the plot plan. A section detail of the wall is attached. Based on my inspection and review, this wall, which is as tall as 9 feet above the ground at its base, is roughly 30 feet long, and was constructed in 1994 (with County permit) to support the most westerly (prow) portion of the old restaurant. The ground surface at the base of the wall is about 10 feet higher than the adjacent beach.

   In order to minimize or avoid disruption of the coastal bluff, the wall should remain intact and in-place. Proper demolition of the old restaurant will decouple the wood framing from the top of the wall. The top of the masonry wall is at approximate elevation 38. The ground under the demolished restaurant can be reshaped to fit the top of the wall and ground at the guest lodging units/ site built decks.

I hope this will provide the County with the information necessary to process Mr Dahan's application. If you have any questions, or if you need any additional information regarding this matter, please don't hesitate to call me.

Very truly yours,



Lee Tromble

LEE TROMBLE ENGINEERING
240 Douglas Park Drive
Crescent City, CA 95531
Phone (707) 464-1293

July 9, 2025

Daniel Dahan
16800 Highway 101 N
Smith River, CA 95567

re: On-Site Sewage Disposal Evaluation
APN 101-070-22

Dear Mr. Dahan:

This is to report on my on-site sewage disposal evaluation of Assessor Parcel 101-070-22, Del Norte County. This parcel is presently developed with the old Nautical Inn Restaurant which is in disrepair and no longer in use. It is my understanding that you propose to demolish the existing facility and develop the property with four (4)- one (1) bedroom park model guest lodging units. As shown on the attached plot plan, the guest lodging units will be sited on the terrace above the coastal bluff, generally within the footprint of the soon to be demolished restaurant structure. The purpose of my evaluation was to determine if adequate sewage disposal area exists on-site to serve your proposed project. It is also my understanding that the water supply will be from the Smith River CSD water system.

This evaluation report assumes a proposed on-site waste water discharge of 800 gallons per day which is based on two (2) persons per guest lodging unit with an estimated wastewater flow of 100 gallons per day per person.

The evaluation consisted of several site inspections, the examination of two (2) backhoe excavated exploratory pits, the collection and testing of a soil sample for textural analysis, and the review of data and reports for nearby properties which we have previously evaluated. I also reviewed a report for this property prepared by Stover Engineering in July of 2014 which included an on-site sewage disposal evaluation and design of an on-site system to serve a previously proposed 20 unit motel on the site. Attached for your information is an evaluation summary, location map, exploratory logs and the laboratory results of the soil sample.

The results of my evaluation is that there is adequate sewage disposal area (Wisconsin Mound area) exists to serve your proposed project within some specified limitations and subject to certain system specifications.

The textural analysis of the soil sample indicates soil percolation qualities suitable for on-site disposal of septic tank quality effluent. However, my evaluation revealed a high groundwater condition which will not allow for the utilization of conventional leach trenches.

I encountered groundwater at a depth of just over 4 feet below the ground surface in both of the test holes. These were "wet weather" observations and are considered representative of the depth to the "highest anticipated groundwater" level. It is required that 5 feet of separation be maintained between the bottom of the leaching trenches and the "highest anticipated groundwater". With groundwater at a depth of 4 feet below the ground surface, the separation to groundwater requirement cannot be met using a conventional leach trench system.

However, Wisconsin Mound systems can be utilized on properties with suitable soils and where there is a minimum of 2 foot separation between groundwater and the native ground surface. Based on this, it is my opinion that the property is suitable for a Wisconsin Mound on-site sewage disposal system.

A Wisconsin Mound is essentially a raised leach field constructed over an engineered sand fill. The mound system requires an effluent pumping system to provide even effluent distribution throughout the mound. In this case, certain site specific measures must be undertaken to properly prepare the mound base area and surface water must be directed around and away from the mound. While these improvements are necessary to be specified as part of the mound plans, this report includes the design of the mound insofar as is necessary to determine the land area necessary to be dedicated for primary and reserve sewage disposal. For your project 2380 square feet (32 ft. x 76 ft. footprint) of mound area is required for both the primary (and reserve) system. The primary and reserve sewage disposal areas are shown on the plot plan. The primary area is presently paved over. The existing paving and gravel base underlying the mound/ landscape area has to be properly demolished and removed from the site prior to construction of the mound.

As stated above, it is my opinion that the subject property is suitable for a Wisconsin Mound on-site sewage disposal system within some specified limitations and subject to certain system specifications. If a change in conditions occurs such as a change in the size of the project, change in the location of the disposal field, change in the disposal system specifications, a substantial physical change to the property or other similar change, it will be necessary to review this report and the data herein in the context of those changes. This could require additional field and laboratory work to confirm site suitability and/or to modify the specifications for the on-site sewage disposal system.

If you need any additional information on this matter or if I can be of further assistance, please feel free to call.

Very truly yours,



Lee Tromble

LEE TROMBLE ENGINEERING
240 Douglas Park Drive
Crescent City, CA 95531
Phone (707) 464-1293

SITE EVALUATION SUMMARY

OWNER: DANIEL DAHAN DATE: 7/2/25

ADDRESS: 16800 HWY 101 N.

SMITH RIVER, CA APN 101-070-22

LOCATION: OLD NAUTICAL INN RESTAURANT

@ 16850 HWY 101 N, SMITH RIVER

LOT SIZE: _____ WATER SYSTEM: SMITH RIVER CSD

GROUND SLOPE: NEAR LEVEL (0-5%) ABOVE BLUFF

SETBACKS	SEPTIC TANK	LEACH FIELD
Well	100'	100'
Stream	100'	100'
Drainage Channel	50'	50'
Ocean, Lake, etc.	100'	100'
Bluff or Cutbank	25'	

EXCAVATION PRIMARY AREA: HOLES #1 & #2

EXCAVATION REPLACEMENT AREA: PRIOR TESTING - JUST SOUTH OF #1 & #2

OTHER EXCAVATIONS: BY OTHERS - RESERVE AREA

DEPTH TO HARDPAN, BEDROCK, ETC.: NONE TO 7 FT

DEPTH TO GROUNDWATER: SEEPS @ 4'

DEPTH TO MOTTLING: WET SEASON OBSERVATION

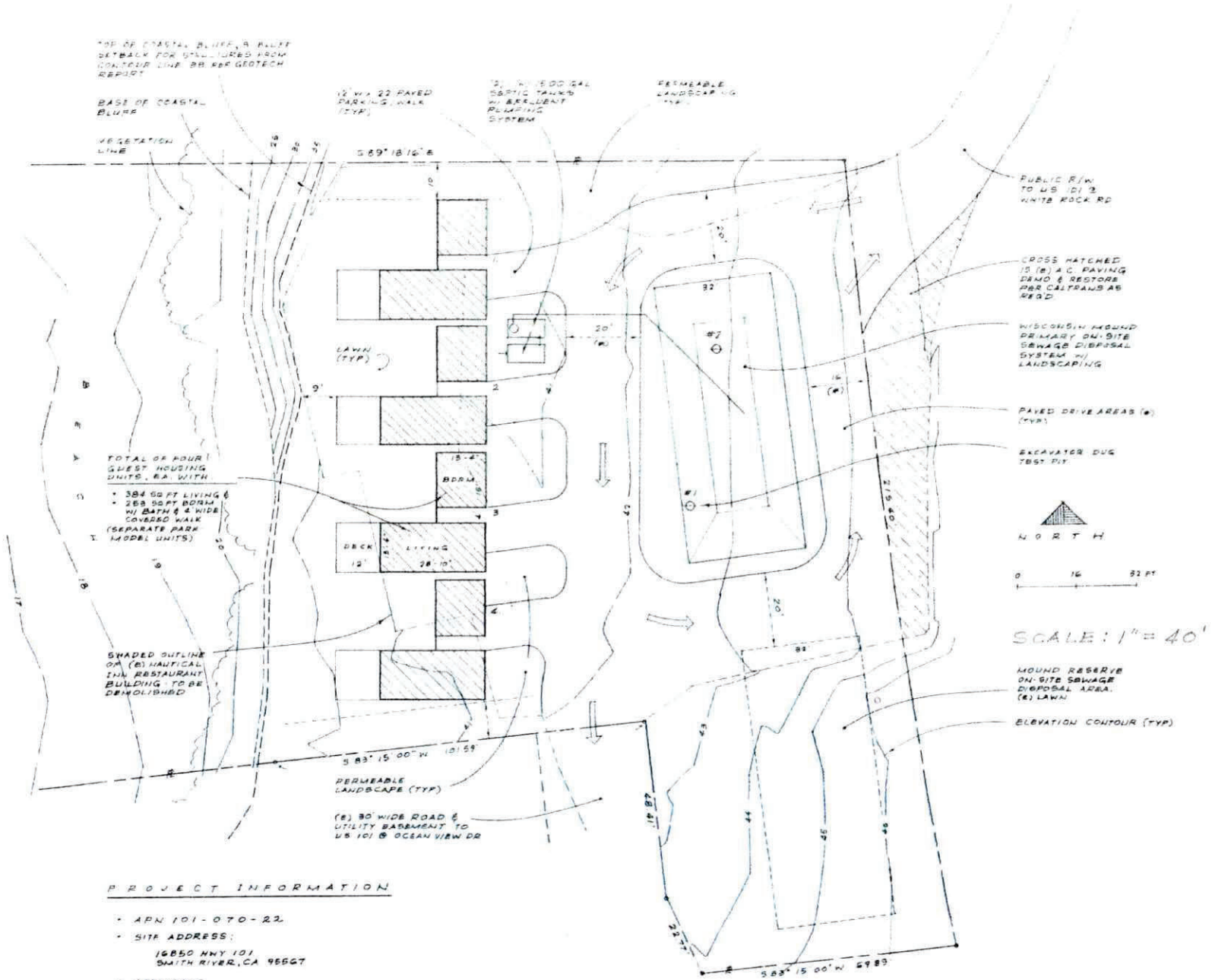
OTHER FACTORS: DUE TO HIGH SEASONAL GW - SITE NOT SUITABLE FOR CONVENTIONAL LEACH TRENCHES BUT IS SUITABLE FOR WISCONSIN MOUND ON-SITE SYSTEM

SOILS ANALYSIS ZONE: 2 PERCOLATION RATE: —

DEPTH OF SOIL UNDER LEACH FIELD REQUIRED: 3' ACTUAL: 4'+ W/ "MOUND

REPLACEMENT AREA AVAILABLE: YES - MOUND

ADEQUATE: YES - MOUND



PROJECT INFORMATION

- APN 101-070-22
- SITE ADDRESS:
  16850 HWY 101
  SMITH RIVER, CA 95567
- APPLICANT
  DANIEL H DAHAN
- WATER SUPPLY:
  SMITH RIVER CSD

LOCATION MAP

APN 101-070-22

DESIGN - WISCONSIN MOUND SHT. 1 OF 1
APN 101-070-22

SITE CRITERIA

SLOPE: 0-5%
SOILS: SANDY LOAM
GROUNDWATER: SEEPS @ 4'

DESIGN FLOW

(1) BED. GUEST LODGING UNITS W/ RANGE - 100 GPD/PERSON
(4) UNITS: (2) PERSONS/UNIT

USE $Q = 100(2)4 = 800$ GALLONS/DAY

MOUND ABSORPTION AREA (AA)

MED. SAND: 1.2 GPD/FT^2

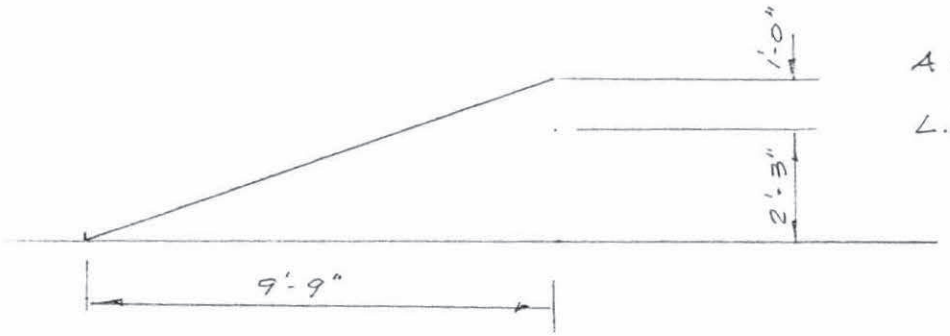
$$AA = \frac{800}{1.2} = 667\ FT^2 \qquad \text{USE } 12 \times 56 = 672\ FT^2$$

MOUND BASE AREA (BA)

SANDY LOAM: USE 0.5 GPD/FT^2 (0.5-0.9)

$$BA = \frac{800}{0.5} = 1600\ FT^2$$

CHECK SIDESLOPE (3:1) DAYLIGHT LINES, BASED ON AA



$A = 31.5(74) = 2378\ FT^2$

$L.R = \frac{800}{2378} = 0.34$ GAL/FT^2/DAY

USE 32 x 76 MOUND BASE AREA

LEE TROMBLE ENGINEERING
240 Douglas Park Drive
Crescent City, CA 95531
Phone (707) 464-1293

EXPLORATION LOG

OWNER DANIEL DAHAN
ADDRESS 16800 US HWY 101
SMITH RIVER, CA 95567
JOB NO. 25031
REMARKS EXCAVATOR

APN 101-070-22
DATE 4/30/25
LOG BY LT
HOLE NO. 1

DEPTH (FT.)	DESCRIPTION / REMARKS	COLOR	MOIST.	SAMPLE
0	ASPHALT / GRAVEL SURFACE			
1	LOAM TOPSOIL, BLOCKY FRIABLE	BLACK	DAMP	NO
2				
3	SANDY CLAY LOAM TO CLAY LOAM, BLOCKY ABOVE TO MORE GRANULAR W/ DEPTH, FRIABLE	YEL. OR. BRN	DAMP	SIM. TO 25031-2
4				
5	GW SEEPS @ ± 4.3' SANDY CLAY (SILT) TO CLAYEY SAND GRANNULAR TO MED DENSE	YELLOW BRN	MOIST	NO
6	6.2'			
7	SAND, SILTY SAND PARTLY CEMENTED	OLIVE GRN/ GRAY	MOIST	NO
8	TO CEMENTED BOTTOM OF HOLE			
9				
10				

LEE TROMBLE ENGINEERING
240 Douglas Park Drive
Crescent City, CA 95531
Phone (707) 464-1293

EXPLORATION LOG

OWNER DANIEL DAHAN
ADDRESS 16800 US HWY 101
SMITH RIVER, CA 95567
JOB NO. 25031
REMARKS EXCAVATOR

APN 101-070-22
DATE 4/30/25
LOG BY LT
HOLE NO. 2

DEPTH (FT.)	DESCRIPTION / REMARKS	COLOR	MOIST.	SAMPLE
0	ASPHALT / GRAVEL SURFACE			
1	LOAM TOPSOIL, BLOCKY FRIABLE	BLACK	DAMP	NO
2	SANDY CLAY LOAM TO CLAY LOAM, BLOCKY ABOVE TO MORE GRAHULAR W/ DEPTH, FRIABLE	YELLOW BRN. TO BRIGHT YEL. BRN	DAMP TO MOIST	YES 25031-2
3				
4	▽ INCR SAND W/ DEPTH			
5	CEMENTED SANDY CLODS			
6	GROUND WATER SEEPS @ 4'+			
7	BOTTOM OF HOLE			
8				
9				
10				

Date: May 30, 2025

Report to: Lee Tromble
240 Douglas Park Drive,
Crescent City, CA 95531

Attn: Lee Tromble

NCL#: 2505296-02A

AP#: **Hole#:** **Depth:**

Project Name/Number: 25031 **Sampled by:** Lee Tromble

Date Received: 05/05/25 Date Sampled: 04/30/25

SOIL EXAMINATION FOR SOIL PERCOLATION SUITABILITY

Textural Analysis	70 %	Sand
(2 sig. figs.)	17 %	Clay
	13 %	Silt
	4%	Coarse Fragments by Volume
Bulk density N/Q*		Zone Classification: 2

Comments:

Zone 1 - Soils in this zone are very high in sand content. They readily accept effluent, but because of their low silt and clay content they provide minimal filtration. These soils demand greater separation distances from ground water.

Zone 2 - Soils in this zone provide adequate percolation rates and filtration to effluent. They are suitable for use of a conventional system without further testing.

Zone 3 - Soils in this zone are expected to provide filtration of effluent, but their ability to accept effluent at a suitable rate is questionable. These soils require wet-weather percolation tests to verify their suitability for effluent disposal by conventional leach field methods.

Zone 4 - Soils in this zone are unsuitable for a conventional leach field because of their severe limitations for accepting effluent.

*The bulk densities of the samples were not quantifiable (NQ) due to lack of naturally occurring soil clods

Microbac - Arcata

Soil Percolation Suitability Chart

Sample ID: 2505296-02A

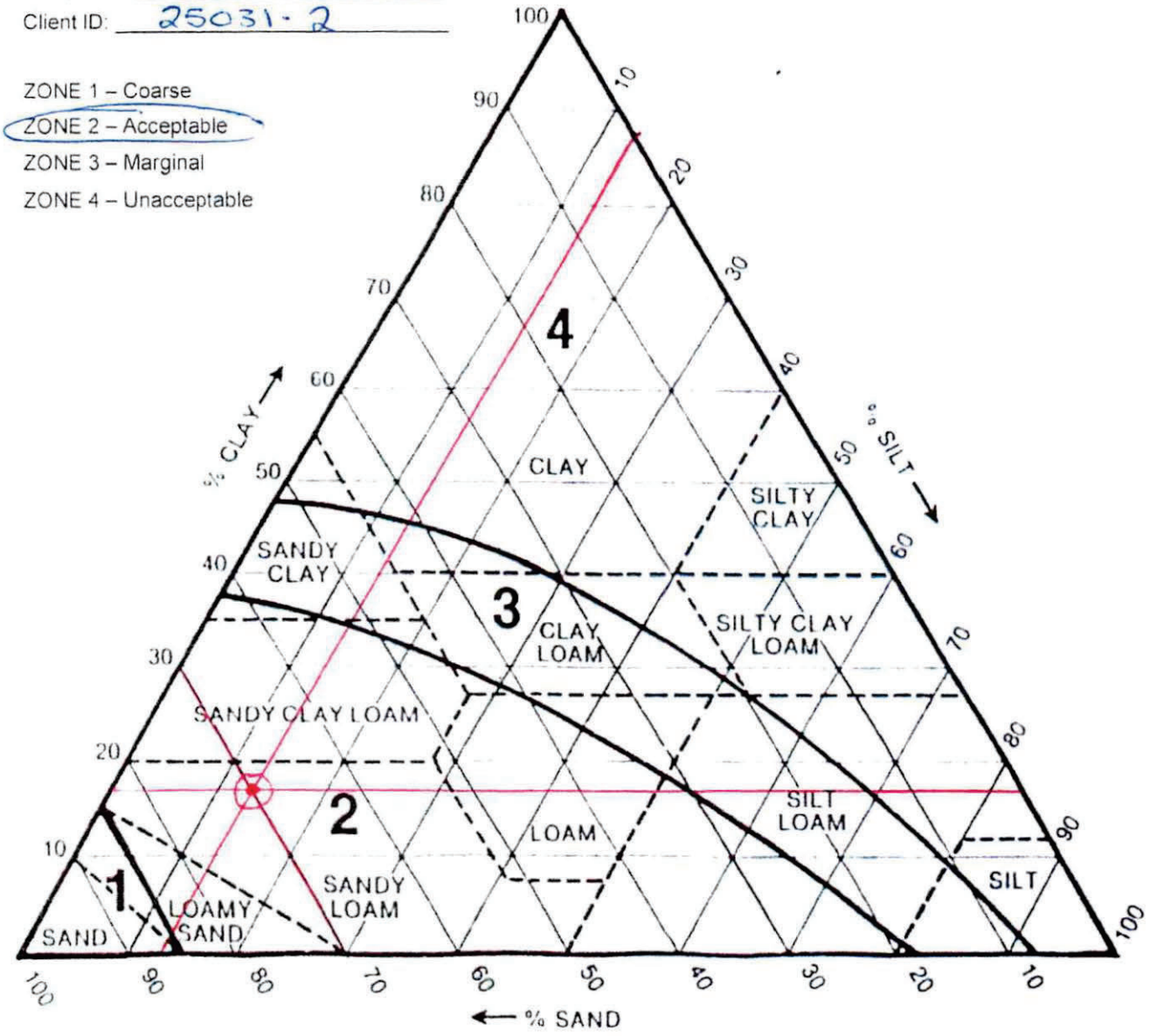
Client ID: 25031-2

ZONE 1 – Coarse

ZONE 2 – Acceptable

ZONE 3 – Marginal

ZONE 4 – Unacceptable



1. Plot texture on triangle based on percent sand, silt, and clay as determined by hydrometer analysis.

2. Adjust for coarse fragments by moving the plotted point in the sand direction an additional 2 % for each 10 % (by volume) of fragments greater than 2 mm in diameter.

3. Adjust for compactness of soil by moving the plotted point in the clay direction an additional 15 % for soils having a bulk density greater than 1 7 g/cc.

4. For soils falling in sand, loamy sand, or sandy loam classification bulk density analysis will generally not affect suitability and analysis will not be necessary.

Results

70 % SAND 17 % CLAY 13 % SILT 4 % Coarse Fragments Bulk Density: N/A g/cc

Smith River
Community Services District

August 22, 2025

Del Norte County Building Department
981 H Street, Suite 110
Crescent City, Ca 95531

Address: 16850 Highway 101 North
Smith River, CA 95567

APN: 101070022

Daniel Dahan own the subject parcel and it currently has a ¾" meter and service, all fees have been paid and is available for use.

If you require other information, please phone or email us at Smith River CSD.

Thank you,

Jeff Beard
General Manager
SRCSD
general.manager@srwater.net
707-487-5381