August 20, 2013

Via hand delivery

Hearings Officer Andrew Stamp
c/o Jill Rolfe, Planning Director
Coos County Planning Department
250 N. Baxter, Coos County Courthouse
Coquille, Oregon 97423


Hearings Officer Stamp:

On behalf of Oregon Shores Conservation Coalition and its members living in Coos County (collectively “Oregon Shores”), I submit these comments in response to the Coos County Planning Director’s Revised Staff Report for File No. SP-12-02 For Administrative Site Plan Review. Oregon Shores is a nonprofit organization whose mission is to conserve Oregon’s public coastal resources, provide assistance and support to Oregonians in participating in land use and other public processes relating to the coast and their communities, and to protect public access to and along Oregon’s coast. Oregon Shores uses legal oversight, field monitoring, and public education to help protect Oregon coastal communities from the impacts of pollution and development. Please include this letter and its attachments in the record and notify me of any decisions made regarding this matter.

The application under review was for design and site plan approval for an energy plant, to be located on Jordan Point, on the shore of Coos Bay. The project, the South Dunes Power Plant, will be used for the generation of energy to support the natural gas liquefaction plant and export terminal planned nearby. The site will also be used to process natural gas into a form useful for liquefaction at the neighboring site. Oregon Shores is concerned that, contrary to the claims of the applicant, and the findings of the county, the plans submitted to the county show that there will be development in what is currently recognized as the 7-D Shoreline Development district. The county did not apply the floodplain or Coos Bay Estuary Management Plan zoning because the county erroneously determined that all development will occur within the Industrial (IND) district. Additionally, plans submitted by the applicant to the Federal Energy Regulatory Commission, the Oregon Department of State Lands, and the Army Corps of Engineers reveal proposed development that has not been disclosed to the county, in the 7-D zone and in Beach and Dune Areas of Limited Development Suitability. Oregon Shores respectfully requests that the county evaluate the entire proposed development for compliance with all applicable zones.
Jordan Cove Energy Project’s Application is Incomplete per CCZO Section 5.6.500.

CCZO section 5.6.500 describes the requirements for submitting a site plan review application. It requires, inter alia: a site plan, drawn to scale, showing the layout of all structures and improvements, including driveways, pedestrian walks, offstreet parking and loading areas, the location of each parking space and each loading berth and areas of turning and maneuvering vehicles, as well as railroad tracks. CCZO 5.6.500(1)(a).

The site plans submitted to the county by the applicant on August 9, 2013, and thereafter in replacement pages, are incomplete because they do not show all proposed improvements on the site as required by CCZO 5.6.500. The applicant has submitted detailed plans for its proposed development on the site to the Federal Energy Regulatory Commission (FERC) and through a joint permit application to the Army Corps of Engineers (USACE) and Oregon Department of State Lands (DSL). Those plans show that the applicant plans to run a utility corridor including a fuel pipeline south of the wetland to the west of the power plant on tax lot 100. EXHIBITS 1, 2, and 3; See EXHIBITS 14 and 17. In addition, JCEP plans to construct a heavy hauling road/accessway through the same area. Id. Plans submitted to DSL and FERC reveal that the applicant is also planning a rerouting of the railroad tracks that generally follow the Trans-Pacific Parkway to the north of the site. These tracks will be re-routed on the west side of the property through the north pond of the wetland, and south, along Jordan Cove Road, according to JCEP’s removal/fill permit application figures. EXHIBITS 1, 4, and 5; see EXHIBITS 14 and 16. Finally, the plans sent to DSL and FERC show development west of the major wetland on tax lot 100, showing the planned location of the Southwest Oregon Regional Safety Center, which will house the Jordan Cove Fire Department, Coos County Sheriff’s Department operations, and classrooms for Southwest Oregon Community College. EXHIBITS 5 and 6; see EXHIBIT 14 section 2.4, and 16. This area remains undeveloped on the site plan submitted to the county. EXHIBIT 7.

The basic purpose of site plan review is to examine the layout and placement of structures on the subject property in relation to county standards. CCZO 5.6.300. The site plans submitted to the state and the plans that have been submitted to the county are inconsistent. The plans that have been submitted to the county omit mention of multiple structures that will be

1 The applicant’s application to FERC describes this corridor: “The access corridor will include a two lane 24-foot-wide roadway, with 12-foot-wide shoulder and bridge structures to minimize impacts to wetlands and to fly-over the access road and rail spur serving the Roseburg Forest Products Company terminal. Additionally the corridor will contain a double circuit overhead 115 kilovolt (kV) power transmission line and an underground pipeway corridor that includes the feed gas supply to the Project, a fuel gas pipeline to the South Dunes Power Plant, a backup pilot gas line, telecommunications lines and redundant control circuitry.” EXHIBIT 15.

2 The application states: “The access corridor... will be utilized initially for the movement of earthwork equipment... and then for the movement of equipment and materials during construction, and finally during operations for control of access and security of the LNG terminal... Additionally, the corridor will contain a double circuit overhead 115 kV power transmission line and an underground pipeway corridor that includes the feed gas supply to the project, a fuel gas pipeline to the South Dunes Power Plant, a backup pilot gas line, telecommunications lines, and redundant control circuitry.” EXHIBIT 14 at section 2.3.1.

3 The Joint Permit Application (to DSL and USACE) states: “An existing Roseburg Forest Products rail Spur will need to be relocated... Relocating the rail spur requires the installation of a new rail bridge. The bridge will be a six-slab concrete structures spanning Wetland 2012-4. It will be nearly 269 feet long and nearly 21 feet wide and supported on steel pile.” EXHIBIT 14 at section 2.5.2.
built on the property, according to plans submitted to DSL. Multiple structures have been disclosed in public documents which are planned for construction within the county’s 7-D zone, as will be discussed below. Without an analysis of these proposed improvements for consistency with relevant CCZO provisions, the site plan application cannot be approved. Additionally, the applicant’s proposal for a Southwest Oregon Regional Safety Center on tax lot 100 is not shown on site plans to the county, but according to county maps, would fall within a Beach and Dune Area of Limited Development Suitability. EXHIBITS 6 and 11. The applicant must demonstrate that these structures will comply with the relevant development code provisions.

The undisclosed structures and improvements are relevant to the county’s site review process, and should be examined for compliance with county land use criteria. These sites are within the scope of the county’s review because they are proposed for construction within tax lot 100, and are integral to the functioning of the South Dunes Power Plant. The underground corridor will provide feed gas to the liquefaction project, and fuel to the South Dunes Power plant. EXHIBIT 14 at section 2.3.1. The road above it will be used for access and security purposes. Id. The corridor will also contain the electricity transmission line between the power plant and the terminal. Id. Finally, the land upon which these structures are being proposed was within the scope of the applicant’s proposal for fill to the county last year. Staff Report for Administrative Decision on File ACU-12-16/ ACU-12-17/ ACU-12-18, Oct 4, 2012. In sum, the county should have been informed about all structures proposed for tax lots 100 and 200, and have the opportunity to review them for compliance with the county zoning and land development ordinance. The applicant has provided insufficient evidence for the county to do so.

The County Must Adequately Assess the Project’s Compliance with CBEMP 7-D Zone Policies and Special Considerations Listed in Table 4.7c.

Maps of the site submitted to FERC, Oregon DSL and the Army Corps of Engineers show that a heavy equipment truck haul road and the hydraulic transport pipeline will cross over and through the 7-D zone at the south end of the preserved wetland, and that the applicant plans to relocate railroad tracks through the northern part of that 7-D wetland. EXHIBITS 1-5; see EXHIBITS 14, 16, and 17. JCEP’s fill application to the county shows the same railroad re-route. EXHIBIT 10. Additionally, a portion of the “gas conditioning (processing)” facility falls within the 7-D zone. EXHIBIT 8. 7-D is a shoreline development zone within the Coos Bay Estuary Management Plan. Based on the inaccurate assumption that the project will be developed only on IND land, the county’s decision erroneously concludes that the application satisfies the CBEMP policy-related criteria.

Proposals for industrial and port facilities and/or utility facilities (as the county characterizes the plant) on 7-D land require a finding of compliance with CBEMP policies 14, 17, 18, 23, 27, 30, and provision of utilities and services subject to policies 49, 50, and 51. CCZO 4.5.286. CBEMP Policy 14 states that only limited types of development are allowed on 7-D lands: farm uses, propagation and harvesting of forest products, private and public water dependent recreation developments, aquaculture, and:

Water-dependent commercial and industrial uses, water-related uses, and other uses only upon a finding by the Board of Commissioners or its designee that such
uses satisfy a need which cannot be accommodated on uplands or shorelands in urban and urbanizable areas or in rural areas built upon or irrevocably committed to non-resource use.

In the approval of the prior application for fill in the 7-D zone, the county determined that policy 14 did not at that time apply, because fill is considered an activity, rather than a use. Staff Report for Administrative Decision on ACU 12-16/ ACU 12-17/ ACU 12-18, Oct 4, 2012, at 6. The proposed development on the site, however, is defined as an “industrial use.” CCZO 2.1.200. Policy 14 indicates that if a use is commercial or industrial, it must also be water dependent, to be allowed in the 7-D area. Thus, in order for policy 14 to be satisfied, the applicant must show, and the county must find, that the proposed development (1) is a water-dependent industrial use, and (2) that it either satisfies a need that cannot be accommodated elsewhere, or that it is proposed to be built in a rural area irrevocably committed to non-resource use. The county has previously determined that the site is irrevocably committed to resource use in Final Order No. 07-12-309Pl. Staff Report for Administrative Decision on File ACU-12-16/ ACU-12-17/ ACU-12-18. However, because the use has not yet been evaluated, there has been no finding that the power plant and combined gas processing area currently proposed are water-dependent industrial uses.

“Water-dependent” is defined as “a use or activity which can be carried out only on, in, or adjacent to water areas because the use requires access to the water body for water-borne transportation, recreation, energy production, or source of water.” CCZO 2.1.200. The proposed power plant does not fall under the “energy production” allowance of this definition, because water dependence for energy production means “uses which need quantities of water to produce energy directly (e.g., hydroelectric facilities, ocean thermal energy conversion).” Id. As this power plant would use natural gas as a source of energy, it is not using water to produce energy directly, within the meaning of this definition. As it stands, the applicant has not alleged that its power plant facility, which is being analyzed separately from the export facility, is in any way a water-dependent industrial use. The documentation sent to the Energy Facility Siting Council states that “[t]he sole water source for construction and operation of the South Dunes Power Plant will be potable supply from the Coos Bay North Bend Water Board,” and does not claim to rely on the adjacent water body as a water source. EXHIBIT 22. Because the power plant is not a water-dependent use, the site plan should not have been approved by the county.

Even if it could be shown that the power plant is a water dependent industrial use, the applicant has not demonstrated compliance with other 7-D criteria. Under 7-D, CBEMP Policy 27 requires protection of floodplains within coastal shorelands. The policy recognizes the potential for property damage that could result from flooding of the estuary. In the fill application approval, the county found that the fill would have a minimal effect, as the base flood elevation increase would be less than 0.01 ft, and appended a condition of approval to require a flood plain elevation certificate prior to the filling of the southern portion of 7-D. Staff Report for file ACU-12-16/ ACU-12-17/ ACU-12-18, Oct 4, 2012 at 7. The application must meet several requirements for finding compliance with development in the floodplain, as per CCZLDO 4.6.235. Additionally, under CBEMP Policy 27, the county must make a finding as to the proposal's impact on the floodplain. If a finding of minimal effect is made, the county should also require a flood plain elevation certificate prior to the development of the structures in the 7-D zone. Finally, the county must review the application for compliance with the remaining
general policy goals required for 7-D development, pertaining to policies 17, 18, 23, and 49-51.

The county administrative decision also lacks findings with regard to CBEMP special considerations. County staff provided findings with regard to the comprehensive plan special considerations listed in Table 4.7a only. Because the project will encroach into the 7-D zone, the special considerations in Table 4.7c must also be addressed. Some of these considerations are the same as those listed in 4.7a. Nevertheless, because of the expanded spatial extent of the project outside the IND zone, the county must make findings pertinent to the special considerations policies as expressed in the CBEMP appendix, as well as the Comprehensive Plan policy appendix.

Specifically, the applicant is proposing development of a hydraulic pipeline, a heavy hauling route, and an accessory utility corridor to the south of the large wetland on the west side of the property, within a Beach and Dune Area of limited development suitability. EXHIBITS 1–3, and 11; See EXHIBITS 14 and 17. The county provided a clear image of inventoried Beach and Dune Areas of Limited Development Suitability on the west side of Tax lot 100 when it produced an analysis of its approval of the JCEP’s fill application. Staff Report for Administrative Decision on ACU-12-16/ACU-12-17/ACU12-18, Oct. 4, 2012 at 4; EXHIBIT 11. This map shows that the structures extending through that area would be built within a Beach and Dune Limited Development Suitability area in the estuary (7-D) zone and the IND zone. Table 4.7c provides that CBEMP policy 30 applies to structures planned for these areas. Policy 30 requires that development shall be permitted in these areas only upon findings related to the adverse effects it might have on the site and adjacent areas, methods for protecting the surrounding areas, and hazards to life and public and private property which may be caused by the proposed use, among other considerations. CCZO Appx 3: CBEMP at 3-35. Policy 30 recognizes that it is important to ensure that development that is proposed for beach and dunes areas is compatible with the fragile and hazardous conditions that occur in beach and dune areas. Id 3-36.

The county must review the applicant’s proposal to site a hydraulic pipeline structure, utility corridor, and an accessway in a Beach and Dune Area of Limited Development Suitability for consistency with CBEMP Policy 30, (and where applicable, with Table 4.7a’s requirements embodied in Appendix 1, Policy 5.10, Strategy 2, for limited development suitability areas in the IND zone).

The County Must Assess the Project’s Compliance with the Floodplain Overlay Zone.

Last year, the county reviewed and approved Jordan Cove Energy Project’s application for revision of the 100-year flood plain, the Coastal Shorelands Boundary, and the 7-D zone at the property. The revision added detail to reflect the applicant’s evidence of the current 100-year floodplain, distinguishing it from that shown on FEMA’s Flood Insurance Rate Map, and significantly reducing the amount of shoreline zone on the property. The line was also adjusted to accommodate the marsh to the west of the cove within the 7-D zone. Notice of Planning Director’s Decision, File ABl-12-01, March 22, 2012.

The northern (landward) boundary of the 7-D zone is defined as the inland limits of the 100-year floodplain, including the freshwater wetlands associated with it. CCZO Article 4.5 at
On the property, the 7-D delineation is synonymous with the 100-year floodplain zone, except that the 7-D zone also includes the freshwater wetland and wet interdune area in the northwest portion of the property (on the west side of tax lot 100). Staff Report for Administrative Decision on File ABI-12-01, March 2012. The 100 year floodplain demarcates the Floodplain Overlay Zone.4 Overlaying a map of the 7-D zone with the site plan shows that a large portion of the southeastern lobe is in the 7-D zone and Floodplain Overlay Zone, as are some areas in the northeastern portion of the cove. EXHIBIT 8. The county has not assessed the site plan for compliance with the requirements of the Floodplain Overlay Zone.

Coos County Zoning and Land Development Ordinance section 4.6.200 states that the purpose of the flood plain overlay zone is to protect human health, minimize expenditure of public money and costly flood control projects, minimize prolonged business interruptions, and ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. CCZO section 4.6.235 provides criteria for sites located within Special Flood Hazard Areas. Specifically, all new construction of industrial structures shall have the lowest floor elevated one foot higher than the base flood elevation, or be floodproofed, have structural components capable of resisting hydrostatic and hydro-dynamic loads and buoyancy, have engineer certification that the requirements of 4.6.235 are met, and site service facilities to prevent water from entering their components during flooding. CCZO 4.6.235(3).

Additionally, CCZO section 4.6.230 presents Procedural Requirements for Development within Special Floodplain Areas. This section requires that an applicant submit to the county, at the time of its application for development, an “Application for Development in Special Flood Hazard Areas.” Such an application must include a plan drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing and proposed structures, fill, storage of materials, drainage facilities, and must include:

a. Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures;

b. Elevation in relation to mean sea level of floodproofing in any structure;

c. Certification by a registered professional engineer or architect that the floodproofing methods for any non residential structure meet the floodproofing criteria;

d. Description of the extent to which a watercourse will be altered or relocated as a result of proposed development.

In its supplemental narrative, the applicant asserts that “this site is out of the floodplain.” August 2013 Supplemental Narrative at 40. The county finds that parts of the property do fall within the floodplain, but maintains that the development for which the site plan review has been prepared is within the IND zone. Revised Staff Report for Appeal of Decision file SP 12-02 at 6. Therefore, the county has not made findings with regard to the FP zone criteria or its procedural

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4 According to CCZO section 2.1.200, the floodplain is: “The area adjoining a stream, tidal estuary or coast that is subject to regional flooding.” The definition given for “regional flood” is “Flood, Regional (100 year): A standard statistical calculation used by engineers to determine the probability of severe flooding. It represents the largest flood which has a one percent chance of occurring in any one year in an area as a result of periods of higher-than-normal rainfall or streamflows, extremely high tides, high winds, rapid snowmelt, natural stream blockages, tsunamis or combination thereof.”
requirements, nor has the applicant submitted an Application for Development in Special Floodplain Areas. To the contrary, maps supplied by the applicant to the county, FERC, and DSL show development within mapped floodplain areas.

The August 2013 site plan replacement sheets that JCEP submitted to the county, when layered with the 7-D zoning map and DOGAMI flood hazard map,\(^5\) show portions of what is labeled as the “Gas Conditioning (Processing) Facility” in the northeastern portion of the cove overlapping into the Special Flood Hazard Zone and 7-D zone. EXHIBITS 8 and 9. Plans submitted to FERC show a stormwater pond overlapping the Special Flood Hazard Zone and 7-D zone in the southern lobe of Jordan Point. This stormwater pond has been relocated and realigned in the most recent amended site plan. EXHIBIT 5; see EXHIBIT 16. Additionally, JCEP has submitted site plans to USACE and DSL which show plans for the development of a hydraulic pipeline and access routes through the 7-D/ floodplain overlay zone. EXHIBITS 1 and 2; see EXHIBIT 14. Before this application can be approved, it must be evaluated for compliance with the relevant floodplain overlay zone requirements.

**Coos County Should Recognize Tsunami Hazard in Assessing the Project’s Compatibility with the Public Health and Safety Directives of the County Planning Ordinance.**

The proposed site is located within the Department of Geology and Mineral Industries’ (DOGAMI) tsunami hazard boundary line. EXHIBIT 20. The South Dunes plant would be considered a “hazardous facility” under ORS 455.447(1)(b), which defines the term as encompassing “structures housing, supporting or containing sufficient quantities of toxic or explosive substances to be of danger to the safety of the public if released.” Because the applicant is proposing a hazardous facility in a tsunami zone, the applicant will be required to consult with DOGAMI for assistance in determining the impact of possible tsunamis on the proposed development and for assistance in preparing methods to mitigate risk at the site of a potential tsunami. ORS 455.447(4).

Coos County currently has no provision limiting development in tsunami hazard areas, despite the statewide planning goal directing counties to do so. Statewide Planning Goal 7. As of 2002, Goal 7 requires that local governments adopt plans to reduce risk to people and property from natural hazards, including tsunamis. County plans are to be amended as necessary upon notice by DLCD, to prohibit the siting of “essential facilities, major structures, hazardous facilities and special occupancy structures, as defined in the state building code (ORS 455.447(1)(a)(b)(c) and (e)), in identified hazard areas, where the risk to public safety cannot be mitigated.” (Emphasis added).

DOGAMI released maps of tsunami inundation hazard for Coos Bay/North Bend “TIM-Coos-005” on July 15, 2012, which show the project site within the expected inundation zone for 8.7 magnitude to 9.1 magnitude local source (Cascadia subduction zone) tsunamis, and a hypothetical maximum event for a large distant-source (Alaska/Aleutian island) tsunami. EXHIBITS 12 and 13; see EXHIBITS 18 and 19. The Oregon Resilience Plan written by the

\(^5\) The County’s adopted 7-D map is consistent with DOGAMI’s map of the area of special flood hazard. The DOGAMI map shows the boundary with higher contrast and slightly more detail, and excludes the associated wetland on the west side of the property.
Oregon Seismic Safety Policy Advisory Commission recommends that coastal communities adopt the latest version of tsunami maps and analysis and include them within local comprehensive plans. EXHIBIT 21.

Coos County is well aware of tsunami inundation hazard, and has been cooperating with DOGAMI to become “TsunamiReady” through K-12 outreach and community-wide evacuation drills. DOGAMI Oregon Tsunami Clearinghouse: Community Programs webpage: http://www.oregongeology.org/tsunamiclearinghouse/communities.htm. Though Coos County has not received official notice from DLCD of tsunami inundation hazard under Goal 7 §C, the county still has a duty to consider the effects of tsunami inundation in the context of this project, through its public safety and welfare criteria.

At the very least, statewide Goal 7 presents guidelines regarding tsunami hazard that the county should have addressed in its site plan assessment decision. Specifically, when reviewing development requests in high hazard areas, local governments “should require site-specific reports, appropriate for the level and type of hazard (e.g., hydrologic reports, geotechnical reports or other scientific or engineering reports) prepared by a licensed professional.” Goal 7 Guidelines § B. Such reports should evaluate the risk to the site as well as the risk the proposed development may pose to other properties. Id.

Coos County Comprehensive Plan policy 5.11 discusses the County’s responsibility to provide appropriate safeguards from natural hazards through land use planning. Specifically, the county includes “ocean flooding” and earthquakes as natural disasters or hazards within the scope of CCCP 5.11. The policy states, “Coos County shall regulate development in known areas potentially subject to natural disasters and hazards so as to minimize risks to life and property.” The county’s decision on the site review neglects to analyze the project under this policy. In particular, the county should review the application to determine whether it is appropriate to site such a volatile facility in a tsunami zone. Certainly a tsunami is a type of earthquake hazard that creates “ocean flooding,” for which the county must plan.

CCZO 1.1.200(12) states that it is the purpose of the zoning ordinance to promote and protect “the public health, safety, convenience, and general welfare.” Article 5.6 states that an objective of the site plan procedure is to “sustain the comfort, health tranquility and contentment of residents and attract new residents by reason of the County’s favorable environment.” CCZO 5.6.100(7).

In its decision, the county discussed only the first purpose of §5.6.100, finding that the proposed project met the purpose of encouraging originality, flexibility and innovation in site planning. Revised Staff Report at 19. More importantly, the county should assess whether it is consistent with the purpose of protecting public health for a hazardous facility to be sited in this low-lying area, given the state’s recognition that even a remote ocean earthquake could inundate nearly the entire site. EXHIBIT 13; See EXHIBIT 19.

The county decision includes no discussion of any such site-specific reports on potential tsunami related hazards the proposed use presents to the site or other local properties (which, given the potential for spillage or release of natural gas during a disaster, could be expansive). In
the interest of public health, the county should have sought information on these hazards before approving the site plan.

The County’s Access Management Assessment Relies on Incomplete Information Supplied by the Applicant.

CCZO section 7.1.550 contains the county’s criteria for evaluating traffic access to the site. Sub-section 13 applies particularly to site plan review procedures for access management. The site plan for review is required to show: the location of existing and proposed access points, all planned transportation features, and parking and internal circulation plans. Additionally CCZO section 7.1.700 contains bridge standards for roads. This section provides several requirements pertaining to the travel surface width of the deck, load bearing requirements, and professional engineer certification.

The county has determined that section 7.1.550(13) has been met, and concluded that section 7.1.700 does not apply because there is no bridge proposed for the site. The applicant has not supplied complete information about its plans for work on tax lot 100 for the county to render a decision on the site plan’s compliance with these criteria. In particular, JCEP has supplied plans to DSL and FERC showing a planned utility corridor bridge and an access road at the south edge of the large wetland to the west of the plant. EXHIBIT 2 and 3; see EXHIBITS 14 and 17. Additionally, in its plans submitted to DSL and FERC, the applicant has provided plans for the Southwest Oregon Regional Safety Center on the very western side of tax lot 100, west of the wetland. EXHIBITS 5 and 6; see EXHIBITS 14 and 16. These features have not been assessed for compliance with the above-mentioned access criteria. Therefore, the county should reconsider its decision to grant site plan approval for compliance with road and bridge design standards.

The County Decision Inadequately Assesses the Project’s Visual Impact.

CCZO § 5.6.400 provides site development criteria and standards. It states, “the landscape shall be such as to minimize erosion and lessen the visual impact,” and that “any grade changes shall be in keeping with the general appearance of neighboring developed areas.” With regard to structures, it requires that, “proposed structures shall be related harmoniously to the terrain and to existing buildings in the vicinity that have a visual relationship to the proposed buildings.”

The county has found that these site development criteria will be met, though the landscaping will only be located “around the perimeter of the private access road to provide at-grade visual buffering...” Revised Staff Report at 19. With regard to grade changes, the decision states that because neighboring areas are covered with undulating dunes, the grade changes on the site are in keeping with the general appearance of the neighboring areas. Revised Staff Report at 20. Additionally, the applicant’s plan only provides for the implementation of landscaping vegetation on the northern boundary of the site, and does not include landscaping to reduce visual impacts to the south. The decision merely maintains that where the subject property abuts the 7-D zone, it would be impractical to add screening vegetation because of the grade changes, and maintains that adding screening vegetation on this side of the property would not be consistent with the purpose of the site planning criteria. Id. The decision also finds that
the applicant's use of native plantings will help the building blend in with the existing terrain, and because the new development would be a "visual improvement" from the last structure on the site, the criterion has been met. Revised Staff Report at 20.

Oregon Shores is concerned that the site is highly visible to residents of North Bend across Coos Bay. Additionally, the grade level proposed will raise the structure much higher than the existing landscape, making it unlikely that it will "blend" in with the existing dunes. The expected grade level, according to the application submitted to DSL and USACE is 40 feet, on the south end of the site. EXHIBIT 14. Oregon Shores urges the county to consider requiring buffer vegetation along the shoreline-adjacent portions of the property, for reduction of visual impacts and erosion risk.

Conclusion

The site plans submitted for review to the county are incomplete. They omit the utility corridor, hydraulic pipeline, heavy hauling road/accessway, railroad track re-route, and the Southwest Oregon Regional Safety Center located on the site. On the plan that has been submitted to the county, the applicant has proposed development of parts of its gas processing facility within the 7-D zone and existing 100-year floodplain hazard zone. The applicant has submitted site plans publicly to other agencies that show multiple structures sited within the 7-D zone and areas of limited development suitability. Thus far, the county has not assessed these structures for compliance with floodplain and CBEMP criteria, and should reconsider its decision to approve the site plan. The proposed plant is an industrial use, but is not water-dependent, and thus, should not be approved for siting within the 7-D zone.

With regard to the health and safety of Coos County residents, the county has neglected any assessment of the vulnerability of this project to tsunami hazard and the project’s potentially explosive impacts in the case of a tsunami inundation incident. Given the directives of Goal 7 and the volatility of the proposed development, Coos County should be more proactive in considering this issue.

Finally, the site plan approval relies on incomplete information in its access management assessment, and has neglected to address the visual impact of this large project to the south of the project site. For these reasons, the application should not have been approved. Thank you for the opportunity to submit these comments.

Sincerely,

[Signature]

Courtney Johnson

On behalf of Oregon Shores Conservation Coalition
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<tr>
<th>EXHIBIT #</th>
<th>Description:</th>
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<tbody>
<tr>
<td>2</td>
<td>Image of development plan provided to DSL and USACE in joint application for removal/fill, June 2013, sheet 3-3A.</td>
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<tr>
<td>3</td>
<td>Figure submitted to FERC by applicant, Docket CP13-483-000, May 2013, Figure 1.3-2, showing placement of the proposed heavy equipment truck haul route and hydraulic transport pipeline route.</td>
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<td>5</td>
<td>Site plan submitted to FERC by applicant, Docket CP13-483-000, Figure 1.10-2 Aerial photography of project site, May 2013, layered with an image of the 7-D zone interpretation as provided in Notice of Hearing on Appeals AP-13-01 and AP-13-02, July 3, 2013.</td>
</tr>
<tr>
<td>6</td>
<td>Image of development plan provided to DSL and USACE in joint application for removal/fill, June 2013, sheet 4-1. Annotations added to show where Beach and Dunes zones are located in relation to site plan features.</td>
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<td>7</td>
<td>Site plan as attached to Revised Staff Report for Appeal of Decision file No. SP 12-02, August 2013.</td>
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<td>8</td>
<td>Background: Image of county zoning interpretation, as shown in Notice of Hearing on Appeals AP-13-01 and AP-13-02, July 3, 2013. Top (translucent) layer: site plan as attached to Revised Staff Report for Appeal of Decision file No. SP 12-02, August 2013.</td>
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<td>9</td>
<td>Background: Image of DOGAMI LiDar-based special flood hazard map (blue denoting areas of special flood hazard). Top (translucent) layer: site plan as attached to Revised Staff Report for Appeal of Decision file No. SP 12-02, August 2013.</td>
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<td>10</td>
<td>Image of proposed fill provided in Staff Report for Administrative Decision on ACU-12-16/ACU-12-17/ACU-12-18, Oct 4, 2012, at 3.</td>
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<td>11</td>
<td>Image of map provided by the county to show the delineation of areas of limited development suitability on the west side of tax lot 100, provided in Staff Report for Administrative Decision on File ACU-12-16/ACU-12-17/ACU-12-18, Oct 4, 2012, at 4.</td>
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<td>12</td>
<td>Close-up of site area DOGAMI Tsunami inundation map (TIM) Coos-05, July 2012, Showing local tsunami hazard.</td>
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<tr>
<td>13</td>
<td>Close-up of site area DOGAMI Tsunami inundation map (TIM) Coos-05, July 2012, showing possible effects of a remote (Alaska/ Aleutian) offshore earthquake.</td>
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<td>JCEP Application to the Federal Energy Regulatory Commission, CP13-483-000, May 2013, Figure 1.10-2—Aerial photography of Project Site.</td>
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</table>
Realignment of train tracks; in 7-D wetland

Hydraulic transport pipeline; heavy equipment truck haul route; utility corridor bridge in 7-D

Exhibit Description:
Top layer: Image of development plan provided to DSL and USACE in joint application for removal/fill, June 2013, Sheet 5-1. **Bottom layer:** image of the 7-D zone interpretation as provided in Notice of Hearing on Appeals AP-13-01 and AP-13-02, July 3, 2013.

The legend shows that the applicant is proposing construction of a hydraulic transport pipeline and heavy equipment truck haul route through the southern end of “Wetland E,” on the west side of the power plant site. Annotations added to highlight other undisclosed development.
Exhibit Description: Image of development plan provided to DSL and USACE in joint application for removal/fill, June 2013, sheet 3-3A.

The legend shows that the applicant is proposing construction of a utility corridor and access road, as well as a utility bridge, through the southern end of “Wetland E,” on the west side of the power plant site.
Exhibit description:
Figure submitted to FERC by applicant, Docket CP13-483-000, May 2013, Figure 1.3-2, showing placement of the proposed heavy equipment truck haul route and hydraulic transport pipeline route, both of which will travel through 7-D, and an area of Limited Development Suitability.
Exhibit Description: Image submitted to Oregon DSL and the Army Corps of Engineers in joint application for removal/fill, June 2013, sheet 5-2. Shows development of a realignment of the rail line through 7-D wetland on west side of the property, in tax lot 100.
Exhibit description:
Site plan submitted to FERC by applicant, Docket CP13-483-000, Figure 1.10-2 Aerial photography of project site, May 2013, layered with an image of the 7-D zone interpretation as provided in Notice of Hearing on Appeals AP-13-01 and AP-13-02, July 3, 2013.
Beach and Dunes Limited Development Suitability Area (IND)

Beach and Dunes Limited Development Suitability Area (7-D)

**Exhibit Description:** Image of development plan provided to DSL and USACE in joint application for removal/fill, June 2013, sheet 4-1.
Annotations added to show where Beach and Dunes zones are located in relation to site plan features.
Exhibit Description:
South Dunes site plan as emailed by Planning Director Jill Rolfe on August 19, 2013. Note lack of site development in areas highlighted in red.
Exhibit Description:

**Background:** Image of county zoning interpretation, as shown in Notice of Hearing on Appeals AP-13-01 and AP-13-02, July 3, 2013

**Top (translucent) layer:** South Dunes site plan as emailed by Planning Director Jill Rolfe on August 19, 2013.

The circle denotes an area of development within the 7-D zone/floodplain.
Exhibit Description:

Background: Image of DOGAMI LiDar-based special flood hazard map (blue denoting areas of special flood hazard).

Top (translucent) layer: South Dunes site plan as emailed by Planning Director Jill Rolfe on August 19, 2013

Circles denote areas of development within the DOGAMI areas of special flood hazard.
**Exhibit Description:** Image of proposed fill provided in Staff Report for Administrative Decision on ACU-12-16/ACU-12-17/ ACU-12-18, Oct 4, 2012, at 3.

Shows development of a realignment of the rail line through 7-D wetland on west side of the property, in tax lot 100.
**Exhibit Description:** Image of map provided by the county to show the delineation of areas of limited development suitability on the west side of tax lot 100, provided in Staff Report for Administrative Decision on File ACU-12-16/ACU-12-17/ACU-12-18, Oct 4, 2012, at 4.

This map depicts the Beach and Dune Limited Development Suitability Area within the IND zone as green. This is the only area in the IND zone that is under review.

The orange color represents the Beach and Dune Limited Development Suitability area in the estuary zone. The only portion under review is zoning district 7-D.

LDO Article 4.7, Table 4.7a Phenomenon 4 Beaches & Dunes, 4a. Permit development within “limited development suitability” only upon establishment of findings. This requires an Administrative Conditional Use addressing Appendix 1, Volume I, Policies 5.10 Dunes, Ocean and Coastal Lake Shorelands, Strategy #2 (page 1-23).
Exhibit description:
DOGAMI Tsunami inundation map (TIM) Coos-05, July 2012, showing that local off-shore earthquakes would have the capacity to inundate the entirety of the proposed site.
Exhibit description:
DOGAMI Tsunami inundation map (TIM) Coos-05, July 2012, showing possible effects of a **remote** (Alaska/ Aleutian) offshore earthquake. The dark orange color represents potential inundation associated with a “worst case” maximum seafloor uplift.
Jordan Cove Energy, LLC
LNG Project
USACE Section 404/10 Permit Application
June 2013

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       Perkins Coie March 29, 2013

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*Reference Federal Energy Regulatory Commission (FERC) Resource Reports
  (See information on tab for specific location within FERC report)

**Reference Slip and Access Channel Project Section 404/10 Permit Application
2.2.2.1. Barge Berth (Sheet 2-3)

A barge berth will be constructed on the east side of the slip. The barge berth will be used during project construction to transport large modules to the Mill Site/South Dunes Site via the heavy equipment haul road (see Appendix A, Figure I-3, Temporary Facilities). The barge berth will be located on the eastern side of the access channel and bordered by an OPEN CELL® sheet pile wall. The concept and construction technique for the OPEN CELL® sheet pile wall surrounding the barge berth are the same as those described for the east side of the slip.

2.2.2.1.1. Construction Approach

Material used to backfill the area behind the OPEN CELL® sheet pile structure will be obtained from an existing dune immediately north of the barge berth. Material will be pushed from the land towards the bay during the in-water work window. Also during the in-water work window, additional temporary fill material will be placed approximately 5 feet outside of the permanent barge berth structure. This 5 feet of additional temporary fill material around the barge berth will act as a sound buffer to eliminate the risk of acoustic disturbance to fish species during pile driving, thus allowing for pile driving to occur in the dry outside of the in-water work window. Further coordination with ODFW and NMFS is currently underway regarding pile driving outside of the in-water work window. All piles will be driven using a vibratory hammer. A turbidity curtain will be placed around the additional temporary fill of the barge berth throughout the duration of pile driving. Based on the detailed turbidity analysis conducted by C&H and its conclusions regarding the nature of the material that would be used as fill for the barge berth, slope armoring around the additional temporary fill will not be required. As such, a turbidity curtain is the only containment measure that will be applied to the barge berth structure.

2.2.2.2. WasteWater Systems

Sanitary waste from the LNG loading berth building located at the LNG Terminal Site will be directed to a holding tank. A sanitary waste contractor will remove the contents of the tank as necessary and dispose of the contents at authorized disposal sites through the contractor’s permits. Sanitary waste from the remainder of the buildings will be directed to on-site septic systems.

2.2.2.3. Wetland/Estuarine Resource Impacts

Both temporary and permanent impact quantities resulting from filling the barge berth (including impacts to existing intertidal strata between the MLLW and the MHHW) are provided in Appendix B, Table 1, Wetland Impacts. The additional temporary fill that will be placed outside of the permanent footprint for the barge berth is discussed in further detail below in the "Minimization Measures" section.

2.3. (3) Utility Corridor/Access Road (Sheets 3-1 – 3-3)

2.3.1. Utility Corridor/Access Road and Haul Road (Sheet 3-1)

An existing access road and utility corridor will be improved to provide access between the LNG Liquefaction and Terminal Site and the pipeline gas conditioning facilities located on the South Dunes Site. The corridor is approximately one mile long and 150 feet wide (toe of slope to toe of slope). It is located entirely on existing JCEP L.P. property and hence involves no other landowner. The access corridor (also referred to as the excavated material temporary haul road and the eastern portion of the heavy equipment temporary haul road) will be utilized initially for the movement of earthwork equipment for the grading and cutting/filling of the two sites, and then for the movement of equipment and materials during construction, and finally during operations for control of access and security of the LNG terminal. By upgrading this corridor, JCEP L.P. will reduce traffic impacts on the existing Trans Pacific Parkway in the area of the LNG terminal and the South Dunes Power Plant.

The corridor will include a two-lane, 24-foot-wide roadway, with 12-foot-wide shoulder and bridge structures that will minimize impacts to wetlands and will extend over another access road and a rail serving the Roseburg Forest Products’ terminal. Additionally, the corridor will contain a double circuit overhead 115 kilovolt (kV) power transmission line and an underground pipeway corridor that includes the feed gas supply to the Project, a fuel gas pipeline to the South Dunes Power Plant, a backup pilot gas line, telecommunications lines, and redundant control circuitry.

All environmental resource surveys, including a water body survey, wetland delineation, threatened and endangered species survey, and cultural resources survey, have been conducted on the corridor route. The results of the waterbody survey and wetland delineation are provided in FERC Resource Report 2 – Water Use and Quality. The results of the threatened and endangered species survey are provided in FERC Resource Report 3 – Fish, Wildlife, and Vegetation. The results of the cultural resources survey of the corridor are provided in FERC Resource Report 4 – Cultural Resources.

2.3.2. West Utility Corridor/Access Road Bridge (Sheet 3-2)

The west utility corridor bridge will be 607 feet long and nearly 41 feet wide. It will span Jordan Cove Road and Wetland 2013-6. Pile-supported footings will support concrete columns, bent caps, and girders. The bridge will have four spans consisting of two end abutments, with one interior bent placed on uplands and two interior bents placed in wetlands. The footing for each bent will include a 28-inch steel pile and a 44-foot by 32-foot concrete seal over the pile. Abutment slope protection will be placed outside of the wetland boundary. Bridge plans are included in Appendix E, Bridge, Rail, and Roadway Plans.

2.3.2.1. Construction Approach

A temporary access and excavated material haul road will be constructed in wetlands (Wetland 2013-6 and Wetland 2012-2) adjacent to the alignment of the new east and west utility corridor bridges to facilitate bridge construction. Fill material will be extended from the haul road to cofferdam locations to provide access to construct the bridge. Some of the permanent footing will be built into the temporary embankment used for the excavated material haul road, which will be placed over geotextile fabric and in the wetland. The footing and column will be built before all temporary fill is removed.

A sheet pile cofferdam will be constructed within the perimeter of each new footing located in the wetlands. Temporary shoring walls will be used as needed at the other foundations. Sheet pile will be driven with a vibratory hammer. The inside of the cofferdam will be excavated to the bottom of the footing seal elevation (elevation -16 feet). Without dewatering, steel pipe pile will be driven with an impact hammer inside the cofferdam. Once pile is driven, a 4- to 10-foot-thick concrete seal will be poured over the pile. The concrete will displace water as it is poured, allowing the water to be pumped into the Baker Tanks, or a similar device designed to contain potential contaminants, for disposal at an approved location. The cofferdam will provide a dry working area for construction of the concrete footing, column, and crossbeam. Steel pile protruding from the seal will be cut at the top to the proper elevation, and the permanent footing will be formed and poured. Columns will then be formed and poured, and the crossbeam will be constructed on the columns. The sheet pile cofferdam will be removed, crossbeams will be formed and poured on columns, and pre-cast concrete girders will be set. Operating from the temporary haul road, cranes will lift girders into place from each end. Once girders are placed, the contractor will form and pour the concrete deck and place the barrier rails.

2.3.2.2. Wetland Impacts

The temporary haul road will require temporary fill and removal impacts. Construction logistics require this fill material to be in place for greater than 24 months. A new bridge bent will require permanent fill material in Wetland 2013-6. Removal fill quantities and acres of impacts are provided in Appendix B, Table 1, Wetland Impacts.

- *Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.*

v. 07-07-09
2.3.3. **East Utility Corridor/Access Road Bridge (Sheet 3-3)**

The east utility corridor bridge will be 300 feet long and nearly 41 feet wide. It will span Wetland E, east of Jordan Cove Road. The bridge type and construction will be identical to that of the west utility corridor bridge. The two-span bridge will consist of two end abutments placed on uplands and one interior bent placed in Wetland E. Abutment slope protection will be placed approximately 5 feet outside the wetland boundary.

2.3.3.1. **Construction Approach**

As mentioned above, construction of this bridge will be nearly identical to construction of the west utility corridor bridge. Cofferdams are anticipated at the foundation in the wetland due to the high water table. Temporary shoring walls will be utilized as needed at the abutments.

A sheet pile retaining wall will be constructed between Jordan Cove Road and the east utility corridor bridge to prevent further wetland impacts from fill slopes. The wall will not require permanent or temporary wetland impacts. Construction will take approximately four to eight months.

2.3.3.2. **Wetland Impacts**

A temporary access and haul road will be constructed in Wetland E and will require temporary impacts. The road will be constructed using aggregate material placed over geotextile fabric. Material will be removed following construction. Removal fill quantities and acres of impacts are provided in Appendix B, Table 1, Wetland Impacts.

2.4. (4) **SORSC Site (Sheet 4-1)**

The Southwest Oregon Regional Safety Center (SORSC) is a multi-agency emergency response and training facility located on the North Spit adjacent to the South Dunes Power Plant Site. The complex is designed to house the personnel and equipment needed to respond to emergency events on the North Spit. The SORSC building houses the Jordan Cove Fire Department, Coos County Sheriff’s Department Operations, and classrooms for the Southwest Oregon Community College. Additional office space is available for representatives of the U.S. Coast Guard (USCG), Oregon State Fire Marshal, and the Port. Classroom space will be used to conduct specialized LNG fire training for both the college and the region’s emergency response community. The site also includes an overpass over the Roseburg Forest Products rail spur and Jordan Cove Road to facilitate efficient access to the Project area in the event of an emergency.

All of the regional emergency response agencies listed above were involved in the SORSC site selection. The following site selection criteria were developed by the Emergency Response Planning group to determine feasible locations:

- On the North Spit and west of the CBR mainline (to ensure that the fire department could respond to an event at the LNG terminal and would not be impacted by a vehicular accident on the McCullough Bridge or a train on the CBR mainline blocking Trans Pacific Parkway);
- Far enough away from the LNG terminal so that the SORSC would not be impacted by an event at the LNG terminal; and
- Above the tsunami inundation elevation.

The location of the SORSC shown in Figure 4-1 is the only location that met the above criteria for site selection.

2.4.1. **Wetland Impacts**

Wetlands A and B will be filled with excavated and dredged material from the Slip and Access Channel and excavated material from the LNG Liquefaction and Terminal Site, and SORSC development will occur on top of the fill. See Appendix B, Table 1, Wetland Impacts for additional details.

2.5. (5) **South Dunes Power Plant Site (Sheets 5-1 – 5-2)**

JCEP L.P. will obtain authorization from the Energy Facility Siting Council (EFSC) to construct and operate the South Dunes Power Plant, a natural gas-fired, combined cycle generating plant that will provide electrical power to the Project. The South Dunes Site is on the site of the former Weyerhaeuser linerboard mill, which closed in 2003 and has since been demolished. Access to the site will be from Highway 101 and then west on the Trans Pacific Parkway, two miles north of North Bend.

The site is currently clear of any significant structures or vegetation, with the exception of a water tank and the PacifiCorp Jordan Point substation. The site elevation will be increased using material excavated and dredged from the slip. The PacifiCorp Jordan Point substation will be relocated on-site after the new substation location has been raised to a final grade elevation of approximately 40 feet. It is anticipated that, except for structures with high overturning moments, spread footing and slab-on-grade foundations will be used to support the plant equipment and buildings. Equipment required for the facility will be delivered to the site via the heavy equipment haul road.

The South Dunes Power Plant will produce 420 MW of electrical power for the Project, as well as process steam that will be used in conditioning gas before its delivery for liquefaction at the LNG terminal. It will consist of two 170 MW blocks of high-efficiency combined cycle combustion turbine generation. Three combustion turbine generators (CTGs), three heat recovery steam generators (HRSGs), and one steam turbine generator (STG), will collectively compose each power block, adding approximately 40 MW to each 170 MW block for a total output of 420 MW.

Each CTG will produce electricity, with the exhaust gases from the CTGs supplying heat to the HRSGs. Steam produced in the HRSGs will be used to power the STGs to produce additional electricity and process steam. Duct burners fueled by natural gas in the HRSGs will allow for production of additional steam and additional electricity from the STGs when needed. Steam exhausted from the STGs will be condensed in air-cooled condensers, and the resulting condensate will be returned to the HRSGs to remake steam.

Fuel will be supplied primarily in the form of boil off gas (BOG) from the Project. Some additional natural gas will be supplied from the gas pipeline, which will connect to a metering station to be located in the southern portion of the South Dunes Power Plant Site. The pipeline and metering station will be installed, owned, and operated by others. Water will be supplied by the Coos Bay-North Bend Water Board (CBNBWB) through an existing pipeline that connects to the South Dunes Power Plant Site.

One new switchyard with generator transformers will be constructed on-site to switch/direct the power produced by both power blocks. The voltage will be stepped up to 115 kV for transmission to the LNG terminal.

The CTGs, HRSGs, and STGs will be outdoor units, given the relatively moderate ambient conditions of the area. A control and administrative building will provide space for plant controls and offices for plant personnel. A separate water treatment area will provide a location for the equipment necessary to purify the raw water, producing demineralized water for use in the power plant steam cycle and amine solution for CO2 removal. The site will also support metering and conditioning facilities for the natural gas supply used by both the South Dunes Power Plant and the LNG terminal.

- *Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.*
2.5.1. Wetland Impacts
The following wetlands will be impacted by excavated and dredged material placement from the Slip and Access Channel and subsequent South Dunes Power Plant development: Wetland H, Wetland I, Wetland J, Wetland L, and Wetland 2012-7. Wetlands F and G will also be filled, but they are not subject to regulation under Section 404 and therefore mitigation for those sites is not proposed. It is the applicant’s understanding, based upon discussions with Bill Mason, DEQ, and the applicable terms of the CWS and related regulations, that Wetlands F and G are not “waters of the United States” subject to permitting requirements under Section 404 when, as in this instance, such areas constitute treatment ponds subject to an NPDES permit. For further explanation of the applicant’s understanding, please see the attached letter from Steve Pfeiffer, Perkins Cole, dated March 29, 2013 in Tab F. See Appendix B, Table 1, Wetland Impacts for additional information regarding removal and fill areas (acres) and removal and fill volumes (CY).

2.5.2. Railroad Bridge (Sheet 5-2)
An existing Roseburg Forest Products rail spur will need to be relocated due to the placement of fill material on the Mill Site/South Dunes Site. Relocating the rail spur requires the installation of a new rail bridge. The bridge will be a six-span concrete structure spanning Wetland 2012-4. It will be nearly 269 feet long and nearly 21 feet wide and supported on steel pile. End spans will be 44 feet, 5 inches, and interior spans will be 45 feet. Each of the seven bents will consist of an eight-pile footing and a concrete pile cap. Five interior bents will be located in the wetlands, with end bents located on upland fill slopes. Bridge plans are included in Appendix E.

2.5.2.1. Construction Approach
Construction of the new railroad bridge will begin with construction of a temporary work bridge. The temporary work bridge will be approximately 20 feet wide and 250 feet long with five 50-foot spans. The temporary work bridge will be placed south of the proposed railroad bridge.

It is likely that the temporary work bridge will use two steel piles per bent with a steel frame and a steel or concrete bridge deck. The temporary work bridge will begin and end in dry land. The end bents will be outside the Wetland 2012-4 boundary, while the interior bents will be placed in Wetland 2012-4.

All pile will be driven with an impact hammer, since no fish are present in this open-water wetland. The temporary work bridge approaches and access road will be gravel. The temporary work bridge will be in place for approximately four to eight months.

The permanent bridge for the new railroad bridge will be driven with an impact hammer from the temporary work bridge located to the south of the railroad bridge. All pile will be driven and then cut off at the necessary elevation, and a pre-cast concrete cap will be fastened to the top of the pile bent. Pre-cast concrete girders will be brought in on the work bridge and set on the concrete pile caps with cranes. Railroad ballast, ties, and one set of rail tracks will be placed on the pre-cast girders. Finally, walkways will be constructed on the sides of the girders.

2.5.2.2. Wetland 2012-4 Impacts
Steel piles for the temporary work bridge will result in temporary impacts to Wetland 2012-4. Steel piles for the permanent railroad bridge will result in permanent impacts to Wetland 2012-4. The temporary work bridge is estimated to be in place for less than one year. All permanent and temporary impacts are listed in Table 1.

2.6. (6) Industrial Wastewater and Water Line Relocation (Sheet 6-1)
Excavation associated with Project construction will require the relocation of an existing industrial wastewater line and water line. See the rest of this Section 2.6 for additional details.

2.6.1. Industrial Wastewater Line Relocation
To allow the development of the Slip and Access Channel, the existing industrial wastewater pipeline will need to be relocated (see Appendix A, Sheet 6-1). The pipeline will be relocated as part of the site clearing, grading, and excavation activities for the Project. Currently, the pipeline carries approximately 500,000 gallons of wastewater per day, which is water that JCEP L.P. purchases from the CBNBWB to keep the ocean diffusers operational. There will be no wetland impacts resulting from the industrial wastewater line relocation. Additional information is provided in FERC Resource Report 1 – General Project Description.

2.6.2. Water Line Relocation
The Roseburg Forest Products terminal currently uses two one-million-gallon water tanks supplied from wells to charge its firewater system. Both of these obsolete tanks will be decommissioned once the Project is placed in service. In order to maintain the water supply to the Roseburg fire water system, a new 12-inch-diameter tap from the existing CBNBWB water line will be made and connected to the Roseburg fire water system (see Sheet 6-1).

The CBNBWB has a potable water line that runs along Trans Pacific Parkway. The CBNBWB also has two raw water lines, one for each of the well fields on the North Spit. One raw water line runs from the well field located to the north of the former linerboard mill site and was the source of water to the mill. A second raw water line connects a well field located to the west of the Project site and to the north of the Trans Pacific Parkway to a water treatment plant. Before the potable water line was constructed, this plant provided the potable water on the North Spit. JCEP L.P. is planning to extend the raw line (before it gets to the treatment plant) to the Project site and to use that water for the concrete batch plant, compaction during site grading (if required), dust suppression during construction, and supplementation of the potable water available for hydrostatic testing (described further in Section 2.3.4), as well as any other construction activity requiring water.

2.6.3. Wetland Impacts
No wetlands will be impacted as a result of the industrial wastewater line or water line.

2.7. (7) Trans Pacific Parkway and Highway 101 Improvements (Sheet 7-1)
To accommodate larger vehicles that will need access to the Project site during construction and operation of the export facility, Trans Pacific Parkway will be symmetrically widened to provide a left-turn lane onto northbound Highway 101. The existing travel lanes are 11 feet wide with less than 1 foot between the edge of pavement and fog line; most areas have a wide gravel shoulder. The proposed improvements would provide a wider turning radius on both sides of Trans Pacific Parkway at Highway 101, two 12-foot travel lanes, a 12-foot left-turn lane, 6-foot shoulders with guardrail, and a 5-foot gravel shoulder on the bay side of the guardrail. Intersection improvement plans are included in Appendix E, Bridge and Roadway Plans in the LNG permit application package.

A sheet pile wall will be installed, as a retaining wall, to minimize fill material in Coos Bay due to road widening. However, the wall will result in permanent impacts below MHHW elevation. The wall will be approximately 600 feet long on both sides of Trans Pacific Parkway. Existing riprap will be removed for sheet pile to be driven. Riprap will then be placed back in the bay at the toe of the sheet pile wall for wall protection.
IN THE UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

APPLICATION FOR AUTHORITY TO SITE, CONSTRUCT
AND OPERATE A LIQUEFIED NATURAL GAS EXPORT TERMINAL

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At this time, there are no facilities expected on the west side of the slip. Thus, as proposed, there is no berth in that location. A berm will be constructed between the west side edge of the slip and Henderson Marsh.

The access channel, which will connect the slip to the navigation channel, will be approximately 800 feet in width at the mouth of the slip and approximately 2300 feet across at its intersection with the navigation channel. It will cover approximately 30 acres below the mean higher high water line.

3. **Access Road and Utility Corridor**

An existing access road and utility corridor will be improved to provide access between the LNG Terminal and the pipeline gas conditioning facilities located on the South Dunes site. The corridor is approximately one mile in length and 150 feet wide (toe of slope to toe of slope). The access corridor will include a two lane 24-foot-wide roadway, with 12-foot-wide shoulder and bridge structures to minimize impacts to wetlands and to fly-over the access road and rail spur serving the Roseburg Forest Products Company terminal. Additionally the corridor will contain a double circuit overhead 115 kilovolt (kV) power transmission line and an underground pipeway corridor that includes the feed gas supply to the Project, a fuel gas pipeline to the South Dunes Power Plant, a backup pilot gas line, telecommunications lines and redundant control circuitry.

4. **Other Facility Systems**

The Project will contain “passive” and “active” hazard prevention and mitigation systems and controls. Passive systems will generally include those that do not require human intervention such as: spill drainage and collection systems, ignition source control, and fireproofing. Active systems normally are either automatic or require some action by an operator. Active spill and fire control systems will include a firewater distribution system, a
Firewater Ponds
Preserved Wetland
Control Building and Maintenance Building
Slip
Liquefaction Trains
Flare
Tug
Dock
Marine Berth and Loading Facilities
LNG Storage Tanks
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Gas Processing Area
Non-Jurisdictional South Dunes Power Plant
Stormwater Pond
PCGP Gas Metering
Navigation Channel
Access Channel
Raw Water Pipeline
Industrial Wastewater Pipeline

Figure 1.10-2 Aerial Photography of the JCEP LNG Terminal Project Site

Sources:
5/6/2013
Created by:
K

EXHIBIT 16
Figure 1.3-2 Truck Haul/Hydraulic Transport Pipeline Route

Legend
- Heavy Equipment Truck Haul Route
- Excavated Material Truck Haul Route
- Hydraulic Transport Pipeline Route
43°26'0"N

CSZ Frequency

time. At intervals, this accumulated energy is violently released in the form of a megathrust earthquake. These earthquakes occur about every 500 years (WGCEP, 2008).

The Oregon Department of Geology and Mineral Industries (DOGAMI) has been identifying and managing the National Tsunami Hazard Mitigation Program, which has been administered by the Oregon Department of Transportation.

Tsunami scenarios, all of which include the earthquake-produced subsidence and the tsunami-erosion, would be an increase in the amount of vertical displacement of the Pacific Ocean, resulting in an averaged wave elevation.

Figure 2: The North American Plate rides over the Pacific Plate bulges up. Because the two plates are stuck in place at the "locked" interface, there is accumulated strain energy. When the earthquake finally breaks the locking, the accumulated strain energy is released in the form of a megathrust earthquake.

The 1700 event is considered to be a "medium-sized" event. The data used to create this chart was compiled from historical accounts and modern studies of the Coos Bay area. The maximum wave elevation profile for the B-B' line shows the potential impact on the City of Coos Bay.

Figure 4: The maximum wave elevation profile for the B-B' line shows the potential impact on the City of Coos Bay. This map also shows the regulatory tsunami inundation line (Oregon Revised Statutes 455.446 and 540.170). The Coos Bay Area buildings within tsunami inundation zones are shown in the detailed map.

Acknowledgments


Transportation data (2008) were provided by Coos County. Urban growth boundaries (2010) were provided by the Oregon Department of Land Conservation and Development. Senate Bill 379 line data were redigitized by Rachel R. Lyles Smith and Sean G. Pickner, DOGAMI, in 2011 (GIS file). The Coos Bay NGS-100 and NESDIS NGDC-21 Digital Elevation Model of Port Orford, Oregon (2009) were used to create the map.

City of Coos Bay
City of North Bend

Coos River North
Haynes Inlet
Lakeside West

Bandon
Coquille River
Bullards Beach

Tsunami Inundation Map Index

Map Data Creation/Development

Kaleena L.B. Hughes, Sean G. Pickner
The maximum event is the same model used for the Prince William Sound event, and the second scenario represents an Alaska-Aleutian Model Specifications.

The.

Tsunami Wave Height through Time for Simulated Gauge Stations

Figure 5: The table and chart show the number of buildings inundated for the M9.2 (1964) Alaska-Aleutian earthquake.

Actual initial tsunami arrival times in the estuary channels located farther inland. Of the communities which killed four people and caused an estimated 750,000 to 1 million dollars in property loss, $84 million and 106 lives, offshore Alaska in 1964, near Sumatra in 2004, and offshore Japan in 2011.

Larry Givens, Governing Board Chair

STATE OF OREGON

OS 200

Hazard Mitigation Program, which has been administered by the National Park Service.

More detailed information on the tsunami models and methodologies used.

Figure 4 depicts time series data for the map plate velocity observed are not necessarily associated with the first tsunami wave.

This map also shows the regulatory tsunami inundation line (Oregon Revised Statutes, Sections 166.050 and 166.070).

Prepare for the next Cascadia Subduction Zone (CSZ) earthquake and tsunami.

The Nature of the Northwest Information Center

Don W.T. Lewis, Rachel R. Lyles Smith

http://www.naturenw.org

Portland, Oregon 97232
OREGON DEPARTMENT OF ENERGY

REGARDING APPLICATION
REQUIREMENTS FOR THE PROPOSED
SOUTH DUNES POWER PLANT

PROJECT ORDER

ISSUED BY
OREGON DEPARTMENT OF ENERGY
625 Marion Street NE
Salem, OR 97301-3742

February 14, 2013
implements requirements of the EPA and is a federally-delegated program. The applicant must comply with ODEQ regulations concerning the storage and management of hazardous materials and the clean-up and disposal of hazardous waste.

(h) **Exhibit H – Geologic and Soil Stability**

**Related Council Standard:** Structural Standard [OAR 345-022-0020]

**Reviewing Agency:** Department of Geology and Mineral Industries (DOGAMI)

All paragraphs apply.

**Discussion**

DOGAMI provides technical review and recommendations on compliance with the Council’s structural standard. The applicant must provide evidence of consultation with DOGAMI regarding the level of geologic and geotechnical investigation practical for the application.

The site is located within the 1995 DOGAMI SB 379 tsunami inundation line referred to in the Oregon Structural Specialty Code and the 2012 DOGAMI tsunami hazard maps.

The application should include a thorough geological characterization of the project area and surrounding area and a site-specific geologic hazard and geotechnical assessment (including seismic, tsunami, lateral spreading, subsidence, surface fault rupture, flood, and channel migration hazards) at the proposed facility with supporting evidence to show that the facility can be safely constructed and operated. This analysis should include recently published scientific findings (or example papers published about the Japan 2011 earthquake and tsunami) and hazard maps (for example landslide and tsunami maps for Coos County, Oregon).

The application should include all results of field and laboratory investigations and any other geotechnical and geologic hazard site evaluations that have been conducted. A thorough ground shaking amplification, liquefaction, and lateral spread analysis with all of the calculations, methodologies, and recommendations based on this site-specific analysis will be required. Any geotechnical reports included in Exhibit H as supporting evidence that the proposed facility will meet the Council’s structural standard should follow the guidelines of DOGAMI’s “Open File Report 00-04 “Guidelines for Engineering Geologic Reports and Site Specific Seismic Hazard Reports.”

Note that OAR 345-021-0010(1)(h), paragraphs (F)(i), and (F)(iv) may contain references to outdated guidelines and codes. ODOE requests that the applicant consult directly with DOGAMI, determine the most current structural standards that apply to their proposed facility, and use those codes to prepare Exhibit H. The application should clearly note which codes and guidelines were used to prepare the information in Exhibit H. Exhibit H should also provide evidence that the current codes are equivalent to or more stringent than those cited in OAR 345-021-0010(1)(h), and that the applicant agrees to construct the facility in accordance with current codes and guidelines.
The Oregon Resilience Plan

Reducing Risk and Improving Recovery for the Next Cascadia Earthquake and Tsunami

Report to the 77th Legislative Assembly

from

Oregon Seismic Safety Policy Advisory Commission (OSSPAC)

Salem, Oregon
February 2013
• Upgrade the facility to meet seismic life-safety standards, and create a backup facility outside of the tsunami zone.

Land Use

This resilience planning effort encourages a comprehensive, risk-based approach to reducing exposure and vulnerability to all natural hazards that potentially affect our coastal communities. Options and recommendations within this section should be helpful in assisting communities move forward in these important efforts. However, if a community needs to relocate a specific facility (for example, a hospital, fire station, police station, emergency response center, or school) in the short term to reduce tsunami risk, then utilizing a more strategic approach may be necessary and appropriate.

The need for pre-disaster relocation of government buildings, schools, and essential facilities has the potential to raise land-use issues. In some communities, such as Cannon Beach and Seaside, existing business areas may become part of new tidal zones after a Cascadia subduction earthquake as a result of subsidence. In some situations, such as the Seaside School District’s relocation effort, sufficient existing land is not available inside the urban growth boundary for relocation, so it is necessary to collaborate with stakeholders to look at other appropriate sites. In other cases, such as the Waldport High School project, relocation can be accommodated within the existing urban growth boundary. In the Waldport case, it was necessary to maintain the vacated site as open space due to the requirements of FEMA funding, which assisted substantially in the relocation effort. FEMA funding can be very helpful in the development and implementation of community relocation strategies; however, there are situations in which these funds are not available or maintaining vacated sites as open space is not workable for a community. In these cases, transitioning to a more resilient community may dictate that the vacated site not be removed from the community’s tax base, but instead be considered for (and used to help fund) the development of low-risk uses or uses which include appropriate and adequate protection or mitigation for seismic and tsunami risks.

The economies of most coastal communities are based on their proximity to the ocean. Ports, by their very nature, will always be in tsunami zones. Similarly, towns such as Cannon Beach and Seaside exist due to their close proximity to the ocean. Rethinking how ports can return and tourism can rebound following a Cascadia event will require an inspired strategy on the part of coastal communities and the state. (It should be noted that Oregon’s coastal ports were built to support fishing and logging, and in many places, these industries are no longer the economic motors they were when the port facilities were built.) In addition, future development within the tsunami zone should seek to reduce risk. One hopeful sign is that 50 percent of growth since 2000 and 2010 census in coastal communities has been outside the tsunami zone (Personal communication with Wood, 2012).

SENATE BILL 379 TSUNAMI INUNDATION ZONE

In the mid 1990’s, Senate Bill 379 directed the Department of Geology and Mineral Industries (DOGAMI) and its board to adopt a tsunami inundation line, and established requirements and restrictions for
certain development within the identified inundation zone. These requirements are found within ORS 455.446-447 and are administered within the Oregon Building Code. DOGAMI is currently remapping the Oregon coast for tsunami hazards. This new analysis is more comprehensive and uses updated methodology developed as a result of analysis of recent tsunami events and further Cascadia earthquake and tsunami research. The DOGAMI Board will soon review this new work to determine how this information should be used for purposes of administering the development restrictions of ORS 455.446-447. This updated mapping, and associated requirements as indicated, will be important considerations for local governments’ comprehensive planning efforts and the development of implementation measures as required by Oregon Statewide Planning Goal 7, 17 and 18 (see http://www.oregon.gov/lcd/pages/goals.aspx for details).

OREGON DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT (DLCD) AND ITS COASTAL MANAGEMENT PROGRAM (OCMP)

Statewide Planning Goal 7 requires local governments to adopt comprehensive plans (inventories, policies, and implementing measures) to reduce risk to people and property from natural hazards and to address concerns about life safety, lifelines, economic viability, and infrastructure. Natural hazards include earthquakes and related hazards, tsunamis, and coastal erosion. DLCD is the agency charged with the responsibility of assisting local governments and local communities in addressing and planning for these hazards.

DLCD is charged with working with DOGAMI and local governments to address the implications of the updated tsunami inundation zone mapping for community development and comprehensive planning. This includes assisting local governments to develop adequate adaptation planning responses in anticipation of a major tsunami event. As part of this effort, DLCD has clarified specific policies that identify the tools that communities can use when adjustments to urban growth boundaries are required, or comprehensive long-term resilience planning is needed. These include:

- Urban growth boundary adjustments to address tsunami risk. Urban growth boundary expansions may be needed to allow for relocation of some community facilities due to tsunami hazard risks—if land is not suitable within the boundary. These would be strategic measures for a single purpose and would be subject to existing urban growth boundary requirements.

- Urban reserves. Communities may use a more comprehensive risk-based approach to reducing exposure and vulnerability to all natural hazards that may affect a community. This approach would be a longer-term effort and would help in situations where land-use zones would no longer be tenable or desirable following the event. Urban reserve work could include planning areas outside the urban growth boundary in preparation for pre- and post-disaster land-use efforts. This comprehensive approach could also help define what associated rezoning efforts would be needed inside the urban growth boundary.

- Community land use tsunami preparation. DLCD has placed a priority on supporting community land use tsunami preparation and on providing tools to help communities become more
resilient to this catastrophic hazard. In order to provide this assistance, the DLCD will partner with a qualified consultant to develop an array of best practices and tools which are tailored to the comprehensive plans of coastal local governments and statewide planning goals. This work will require comprehensive research, creative thinking, and compilation of an extensive set of resilience options, including a range of both land use incentive and regulation tools. This effort anticipates the development of a set of comprehensive tsunami resilience tools, which include such things as a tsunami hazard overlay zone and other land use related tsunami resilience provisions.

Recommendations

► Encourage coastal communities to adopt the latest version of tsunami maps and analysis and to include these within local comprehensive plans.

► Work with local communities to develop comprehensive plans and policies related to becoming more resilient to tsunamis; such plans and polices should direct and authorize associated implementation actions.

► Encourage communities to develop a tsunami hazard overlay zone and other tsunami resilience provisions related to land use, which could be adopted and used within local land use codes.
  - The code language could include options for incentives, requirements, and best practices for assisting communities to become more resilient to tsunamis.
  - Guidance materials could include options such as incentives and regulations related to allowed uses in inundation zone areas, tsunami evacuation route requirements, use requirements for vacated areas, and mitigation measures for development within inundation areas.

► Support local government consideration of ORS 455.446-447 requirements (as potentially amended) for minimum requirements within local comprehensive plans and implementing ordinances.

► Support local government efforts to apply best practices and the tools developed by the Oregon Department of Land Conservation and Development (DLCD), when revising coastal communities’ comprehensive plans to increase resilience to Cascadia type events.

► Support local governments as they review their respective urban growth boundaries to identify key community facilities which may need to be relocated to address substantial tsunami risk. Work with communities to develop local land use policies and strategies to address future relocation of these facilities.

► Encourage communities to consider strategies to increase the tsunami resilience of those parts of the community that cannot be relocated.
These strategies could include such things as the development of structures of such size and bulk that, if appropriate for the area, a vertical evacuation structure could be included as the top component.

These strategies may need to include revision of zoning codes to allow suitable building height provisions for these structures.

Reconstruction

LARGE-SCALE DEBRIS REMOVAL
Requirements and plans for the removal of debris must be developed on a county and community level per discussion with U.S. Army Corps of Engineers before the Cascadia event. Given the terrain of the Oregon coast, available land for such purposes will be at a premium, and the need to dispose of debris may conflict with other vital needs during relief and recovery efforts. Moreover, both the debris and its removal will have long-lasting environmental impacts. Planning for recycling and reuse of this debris must be put into place before the event to reduce landfill and environmental impacts.

The U.S. Army Corps of Engineers has indicated that local governments should identify land for response and recovery efforts as part of their planning work before a Cascadia subduction zone event. This essential planning will expedite debris removal activities after the earthquake and tsunami. In addition, a viable transportation system must be put in place in order for the Corps of Engineers to get the necessary heavy equipment into place. Local jurisdictions can facilitate this effort by making arrangements in advance with existing local heavy equipment operators. These plans need to include both staging areas for the heavy equipment and areas for collection and sorting of the debris.

It should be noted that there are no landfill areas on the coast, and the local transfer station areas will be quickly overloaded following the event.

Recommendations

- Develop and implement debris management programs for the recovery period following a Cascadia subduction zone earthquake and tsunami.
- Look at alternative strategies to reduce environmental impacts of debris for coastal communities.
- Develop a tool box of creative methods to recycle and reuse debris.
Notice of Intent
to Apply for a Site Certificate
for the
South Dunes Power Plant
Coos County, Oregon

submitted to
Oregon Energy Facility Siting Council

July 2012
Amended November 2012

Jordan Cove Energy Project, LP
125 Central Ave., Suite 380
Coos Bay, OR 97420
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Introduction

The South Dunes Power Plant (SDPP) will be a natural gas fueled combined cycle generating plant located on the North Spit on Coos Bay, in Coos County, Oregon, across from the city of North Bend. The plant will produce a nominal 380-420 megawatts (MW) of electrical power and process steam for gas conditioning prior to delivery to the Jordan Cove LNG facility. Jordan Cove Energy Project, L.P. (JCEP) would construct and operate the SDPP, which will consist of two 470-210 MW blocks of high-efficiency combined cycle combustion turbine generation, with duct firing capability. Three combustion turbine generators (CTG), three heat recovery steam generators (HRSG), and one steam turbine generator (STG), will collectively compose each power block.

Each CTG will produce electricity, with the exhaust gases from the CTG(s) supplying heat to the HRSG(s). Steam produced in the HRSG(s) will be used to power the STG to produce additional electricity and process steam. Duct burners fueled by natural gas in the HRSGs will allow for production of additional steam and additional electricity from the STGs when needed. Steam exhausted from the STGs will be condensed in air-cooled condensers, with the resultant condensate returned to the HRSGs to remake steam.

Fuel will be supplied primarily in the form of boil off gas (BOG) from the Jordan Cove LNG Plant. Supplemental natural gas will be supplied from the Pacific Connector Gas Pipeline, which will connect to a metering station to be located in the southern portion of the SDPP site. The pipeline and metering station will be installed, owned and operated by others. Water will be supplied by the Coos Bay/North Bend Water Board through an existing pipeline that connects to the SDPP site.

One new switchyard with generator transformers will be constructed onsite to switch/direct the power produced by both power blocks. The voltage will be stepped up to 230-kilovolt (kV) for transmission to the LNG Plant and stepped up to 115 kV to interconnect with the local utility systems, should they desire to purchase power from the SDPP. JCEP has evaluated three transmission line options: Option 1 would interconnect to the existing PacifiCorp system onsite (substation to be relocated); Option 2 would include a new Central Lincoln PUD owned and operated 6-mile transmission line located primarily within or adjacent to an existing railroad ROW to interconnect with the Bonneville Power Administration (BPA) system. Option 3 would interconnect to both BPA and PacifiCorp. No determination as to interconnection has been made. If any option is implemented, the total length of all new installed transmission lines would be less than 10 miles.
The CTGs, HRSGs, and STGs will be outdoor units, given the relatively moderate ambient conditions of the area. A control and administrative building will provide space for plant controls and offices for plant personnel. A separate water treatment area will provide a location for the equipment necessary to purify the raw water, producing demineralized water for use in the power plant steam cycle, power augmentation (SPINT) system, NOx emissions control (injection) system, and amine solution for CO2 removal. The site will also support metering and conditioning facilities for the natural gas supply used by both the SDPP and the LNG plant.

The South Dunes Power Plant will be located on a former Weyerhaeuser linerboard site, closed in 2003 and since demolished. Access to the site will be from US-101 then west on the Trans Pacific Parkway, 2 miles north of North Bend. The site is currently clear of any significant structures or vegetation, with exception of a water tank and a PacifiCorp substation. The site elevation will be built up out of the tsunami inundation zone using material dredged from the Oregon International Port of Coos Bay marine slip under an existing Department of State Lands permit. It is anticipated that except for structures with high overturning moments, spread footing and slab-on-grade foundations will be used to support the plant equipment and buildings.

Within this Notice of Intent (NOI) the terms “SDPP site,” “Site” and “Site Boundary” are used to refer to an area of approximately 130 acres which includes the “South Dunes Power Plant Site.” The term “South Dunes Power Plant Site” (Site) refers to approximately 130 acres of property which JCEP intends to own and control in mid-2012 which will include the generating equipment and gas conditioning equipment. Figure G-1 provides an overview of the Project site, Site and Site Boundary. When constructed, the SDPP will be located within a secured, fenced area of approximately 65 acres.

The majority of construction parking and construction laydown areas will be on property available and leased temporarily from the adjacent Roseburg Forest Products facility located between the SDPP site and the LNG Plant. Critical construction office facilities and temporary laydown area will be located on the SDPP site. Areas disturbed during construction will be restored after construction is complete.
Exhibit L

Information about anticipated water use during construction and operation of the proposed facility, including:

(A) A description of each source of water and the applicant’s estimate of the amount of water the facility will need from each source;

The sole water source for construction and operation of the South Dunes Power Plant will be potable supply from the Coos Bay North Bend Water Board. Construction uses will be mainly equipment or system flushing, chemical cleaning, steam blows, and dust control over the 24 month construction period. Steam system condenser cooling, typically a large water use system, will instead use air-cooled condensers, which will substantially minimize plant water use. Normal operational uses will be potable/service water, power augmentation (SPRINT) system, NOx emissions control (injection) system, and steam cycle makeup; an occasional use will be combustion turbine compressor cleaning. Average daily operational uses are estimated at 807,840 gallons per day; maximum daily use at 925,920 gpd 1.03 million gallons per day.

(B) If a new water right is required, the approximate location of the points of diversion and the estimated quantity of water to be taken at each point;

The applicant will not require new water rights (permits) during construction or operation of the SDPP. Water supply will be by contract with the Coos Bay North Bend Water Board.

(C) For operation, the source of cooling water and the estimated consumptive use of cooling water, based on annual average conditions.

Dry, air-cooled condenser cooling will not require a continuous supply of cooling water. Periodic supplements may be required during maintenance.